

Knowledge and Attitude of Health Care Providers on the Use of Partogram: A Study in Rural Bangladesh

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Abstract:

Background: This study was conducted to assess the knowledge and attitude of health care providers regarding effective use of the partogram in monitoring the progress of labour.

Methods: A total fifty health care providers were assessed with a preformed questionnaire during pre and post exposure to a 5-day training program and their pre- and post-test scores were analyzed. Attitude was assessed by checking randomly selected 50 partographs filled up by trained health care providers. Their attitude also tested by direct interviewing with 50 service providers.

Results: Mean age of the respondents was 31.22 (± 6.32) years. There was significant improvement of test scores after the training program. Random partograph assessment showed 85.4% correct response. Majority respondents showed positive attitude towards the use of partograph.

Conclusion: Results of this study shows that the 5-day training program on use of partograph is effective. But further training programs including refresher training and capacity building on programme is required for long term success on the use of partograph.

Key-words: Partograph, Health care providers, Upazila Health Complex

Background

A considerable number of women suffer from complications of labour and some of these complications result in maternal and neonatal mortality. According to recent global estimates, about 289,000 women die annually from pregnancy related complication.¹ Most of these deaths occur in the developing world. Despite the fact that maternal mortality rate (MMR) in Bangladesh has been reduced from 376 per 100,000 live births in 2003 to 172 per 100,000 live births in 2017, it is still very high.² A partograph is a simple, low-cost monitoring tool for active phase of 1st stage of labour having the potential to identify labour dystocia by graphically representing the critical events of labour progression, including the condition of both mother and the foetus.³

It is recommended by the World Health Organization (WHO) and has impact on improving the quality of intrapartum care, maternal health and birth outcomes.^{4,5} A prospective multicenter trial conducted in South-East Asia by the WHO showed significant reduction in prolonged labour, need for labour augmentation, caesarean section, and number of intrapartum stillbirths where partographs were used along with appropriate labour management guidelines.³ Studies have shown that use of partograph can be highly effective in reducing complications from prolonged labour like postpartum haemorrhage, sepsis, obstructed labour, uterine rupture, its sequelae and the new-born death, anoxia and infections⁶. In addition to increased morbidity and mortality of women, improper usage of the partograph

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can lead to an increase in unnecessary interventions.⁷ Unfortunately the effective use of partogram in improving the birth outcome is not utilized as suggested by a Cochrane review⁸. Specially in low and middle income countries with high maternal and neonatal mortality, this inexpensive tool is not used accurately as intended during intrapartum care.^{9,10} Bangladesh is among the ten countries contributing to the major share (59%) of global maternal deaths and two-thirds of this maternal deaths are due to direct obstetric causes, including prolonged and obstructed labour.^{11,12} The recent five year strategic plan of Health, Population and Nutrition Sector Program 2017-2022 (HPNSP) of Bangladesh has therefore focused on identifying complications during labour and appropriate referral to Emergency Obstetric Care (EmOC) equipped health facilities as an effective way to reduce the maternal and neonatal mortality.¹³ The introduction of the partogram also led to the reduction in unnecessary labour augmentation and caesarean section rate.¹⁴ Campbell et al., in the Lancet Maternal Survival Series, also prioritized delivering in primary care facilities with improved access to referral centres.¹⁵

Union Health and Family Welfare Centers (UH&FWC) are the first level of primary care centers in the government health system of Bangladesh. These centers are staffed by a single health worker, trained to offer basic obstetric services to a population of around 35,735 in a union (lowest administrative unit).¹⁶ Utilization of partogram at this facility is vital to guide the health worker to identify abnormal labour and to implement the appropriate management, including prompt referral to higher level facilities equipped with EmOC signal functions at district.

A need assessment survey undertaken in Bangladesh found that partograms are used only in 3% of all deliveries conducted in health facilities.¹⁷ The lack of partogram use might result in delayed identification of intrapartum complications and delayed or unnecessary intervention¹⁸ A systematic review of partogram use suggests its potential to trigger the referral decision of critical obstetric cases by health workers.¹⁹ However, there are limited studies on the use of partogram as a referral tool by health workers in primary level health care facilities.^{20,21}

Aims of the Study:

1. The study aimed to assess the change in knowledge and attitude of health care providers towards the effective use of partogram in monitoring the progress of labour at Kurigram district hospital and four upazilla health

complexes (Ulipur, Fulbari, Nageshari, Rowmari) from January 2018 to June 2018.

2. The study also aimed at finding the factors on which the health workers depends on decision making for referral of women with abnormal labour.

Objectives of the study:

1. To assess the knowledge of health care providers regarding the effective use of partogram in monitoring the progress of labour at the primary level of health care facility after 5 days training program.
2. To assess the change in attitude of health care providers towards the use of partogram after 5 days training program.
3. To assess the effectiveness of the 5-day training program for health care providers on working standards for facility-based quality care for mothers and newborns in Every Mother Every Newborns (EMEN) projects facilitated by UNICEF, Quality Improvement Secretariat(QIS) and supported by OGSB during January to June, 2018.

Methods

This was a descriptive type of analytical study. Fifty health care providers from Kurigram district hospital and four upazilla health complexes, selected by simple random sampling by lottery, took part in the study. The participants were selected from those who received the five days training on working standards for facility-based quality care for mothers and newborns in Every Mother Every Newborn (EMEN) projects facilitated by UNICEF, Quality Improvement Secretariat (QIS) and supported by OGSB during January to June, 2018. Data were collected on a preformed questionnaire both before and after the training from Pre- and Post-testing form. Six months after training their performance on plotting partogram was assessed by checking and evaluating randomly selected 50 partograms filled up by them, then by directly interviewing the selected health care providers. Collected data were analyzed using SPSS version-20. Discrete variables were described as frequency and percentage and we used McNemar's test to find level of significance. Paired sample T-test was applied for evaluating the total score in pre- and post-test answers. The p-value for significance was set at <0.05.

Results:

Mean age of the respondents was 31.22 (±6.32) years and range was 20-48 years. Majority were from

the middle age group (Fig 1). There were doctors, midwives, nurses and senior staff nurses among the respondents (Fig 2). Thirty three (66%) had previous training on partograph.

Findings on the knowledge of health care providers about various denominators of partograph are summarized in Table I. It was found that before training correct answer obtained from 36%-76% of participants. But after getting 5 days training it was 56% to 92%.

A scoring system was applied to the responses of the 50 responders ('1' point for each correct response and '0' point for each incorrect response). Total score was calculated pre- and post-test for all the respondents. Mean score in pre- and post-test replies were 6.76 and 9.06 respectively ($p < 0.001$). Average score difference was +2.3. Fig. 3 shows 80% respondents obtained improved total score after completion of the training program. Six respondents (12%) got same score while 8% got lower scores in their post-tests.

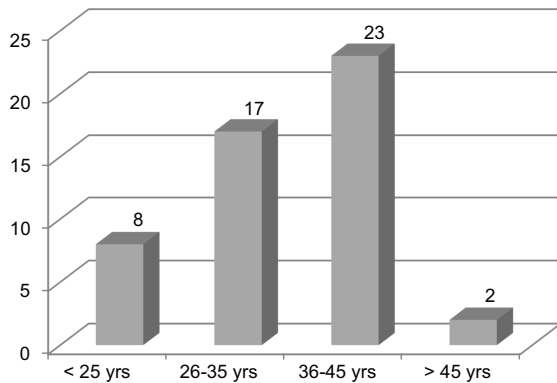


Fig.-1: Distribution of the respondents according to age group (n=50)

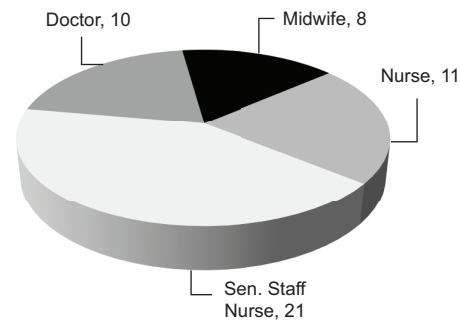


Fig.-2: Distribution of the respondents according to professional category (n=50)

Table-I
Response of the health care providers (before and after training)

Denominators	Response	Before training	After training	p value
Main goal of a partograph	Correct	18 (36%)	28 (56%)	0.606
	Incorrect	32 (64%)	22 (44%)	
When to start plotting	Correct	30 (60%)	39 (78%)	0.018
	Incorrect	20 (40%)	11 (22%)	
Significance of alert/action line	Correct	25 (50%)	36 (72%)	0.024
	Incorrect	25 (50%)	14 (28%)	
Which item is the first plotting	Correct	23 (46%)	38 (76%)	0.215
	Incorrect	27 (54%)	12 (24%)	
Where first plotting will be done	Correct	26 (52%)	40 (80%)	0.060
	Incorrect	24 (48%)	10 (20%)	
What sign cervical dilatation is denoted with	Correct	38 (76%)	45 (90%)	0.062
	Incorrect	12 (24%)	5 (10%)	
What sign head descent is denoted with	Correct	34 (68%)	43 (86%)	0.001
	Incorrect	16 (32%)	7 (14%)	
What is the timing of each small box	Correct	33 (66%)	45 (90%)	0.000
	Incorrect	17 (34%)	5 (10%)	
What is normal FHR	Correct	32 (64%)	45 (90%)	0.001
	Incorrect	18 (36%)	5 (10%)	
What parameters to be plotted half hourly	Correct	19 (38%)	33 (66%)	0.901
	Incorrect	31 (62%)	17 (34%)	
What to be plotted first after first 4 hours	Correct	29 (58%)	43 (86%)	0.008
	Incorrect	21 (42%)	7 (15%)	
How to plot meconium staining	Correct	34 (68%)	46 (92%)	0.000
	Incorrect	16 (32%)	4 (8%)	

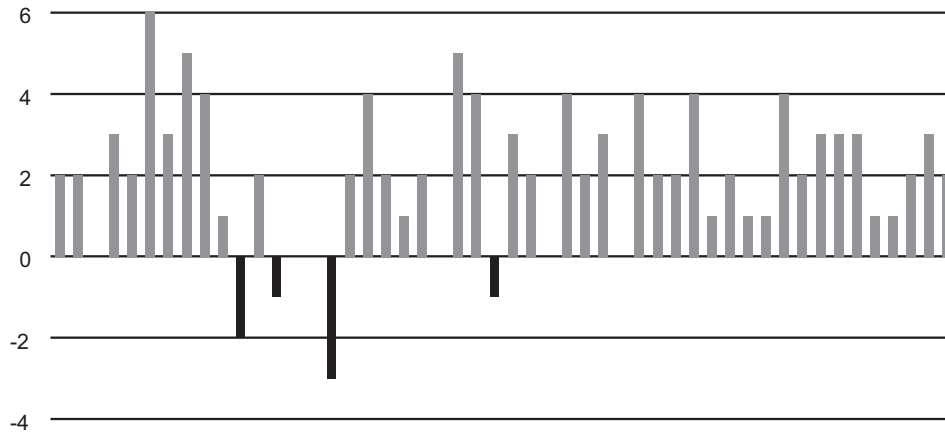


Fig.-3: Differential scores (Pre- and Post-test) of fifty respondents

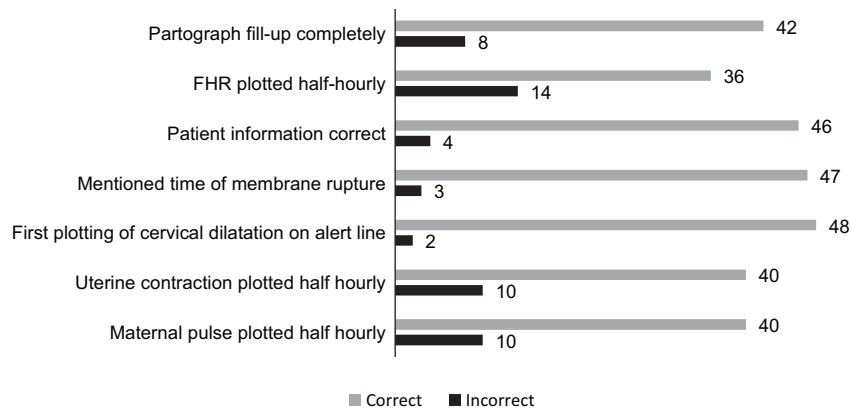


Fig.-4: Evaluation results of fifty randomly selected partographs

Six months post-training, fifty (50) randomly selected partographs were evaluated with selected variables (Fig 4). On an average, 85.4% parameters were found correct.

To assess attitude of the midwives, fifty midwives were asked about why plotting is not properly done. Majority identified inadequate training and frequent posting out of trained staff as the main setback (Table II).

Table-II
Attitude assessment of fifty midwives

Problem	n
Frequent posting out of staff after training	44
Inadequate training of newly recruited HCP	40
Feeling difficulty in ½ hourly monitoring	9
Work-load of the staff	5
Lack of motivation	3
Insufficient supply of partograph	0

Discussion:

Partogram is an instrument for monitoring labor and facilitating decision making. A decision for referral is initiated after the identification of abnormalities, thereby necessitating the correct use and skills for partograph plotting.^{22,23} A study shows that partographs without any indication of abnormal labour had significantly lower proportion of recording of foetal heart rate, moulding of head, and cervical dilatation than those showing indication of abnormality. This indicates that an incomplete and poorly charted partograph failed to instruct the health workers to take evidence-based decisions and increased the risk of handling complicated obstetric cases. This is further underscored by the fact that in the study the stillbirth rate among those with abnormal partographs was higher than those with normal partographs (4.2% of 71 abnormal and 3.3% of 577 normal partographs).⁵ So its success largely depends on the health care provider to be accustomed with its various

components. Proper utilization of a partograph is critical in preventing maternal and perinatal morbidity and mortality.²⁴

The predominant age in this study group was 36-45 years (46%). This is similar to that reported by Archa et al who found 30-39 years as the predominant age group.²⁵ Mean pretest score was 7.66 (out of a total of 13). Twenty three (46%) respondents scored 70% or more in the pretest, while the number increased to 39 (78%) after the 5day training. In their study, Konlan et al reported only 17% of the participants bettered 70% score.²⁴ The comparatively higher scores in this study may be attributed to more experienced and senior respondents and also due to the EMEN program in these centers. Post test score improved significantly indicating that the 5-day training was effective. But nonetheless, as 20% health care providers did not improve on their post test scores, there is much room for improvement.

Evaluation of filled-up partograph showed about 85% improvement. But on the spot evaluation may reveal a more accurate assessment of the situation. This finding is consistent with several studies reporting the persistent gap in knowledge about different sections of the partograph and their relevant role in labour management.^{18,26,27,28} Several studies that looked at the quality of partograph use also reported a wide range of sub-optimal recording of components pertinent to decision making.^{18,29,30,31} Sub-optimal documentation with limited utilization of partographs for decision making negates the observed increased completion of partographs. If health workers do not use the information recorded on partographs to inform evidence-based decision making, the care provided to the women and foetus does not improve.

Overall attitude of the health care providers towards the use of partograph was positive. As in other similar studies, the respondents identified inadequacy of the training and frequent changing of trained personnel as the main obstacles. A trial conducted in Indonesia showed not only high rate of partograph usage (92%), but also ensured referral of almost two-thirds of identified prolonged labours following the implementation of obstetric care interventions in those facilities³². The intervention included on-the-job training of midwives and weekly supervision by obstetricians who would ensure the correct filling up of partographs. Therefore, the pre-service training of the primary care providers (FWVs) should be

accompanied by continuous education, refresher training and periodic supervision by specially trained nurses with midwifery skills or by the newly created midwives from higher level facilities^{32,33}. Innovative training approaches such as using the WHO e-learning tool for partographs can be considered, which was found feasible among midwifery students in Nairobi⁸.

There was also adequate supply of partograph sheets due to the ongoing training program. But shortage of partograph sheets may be seen in other centers. Few studies reported of retrospective documentation of partograph with bureaucratic priority following a government or non-government interventions which undermine the purpose of the partograph.^{34,35} At low resource settings where unavailability of partograph sheets was reported to be a potential barrier.^{9,26,36,37}

Conclusion:

Considerable number of health care providers had a fair knowledge of partograph and also showed a positive attitude towards its use. But this small group of respondents may not represent the true picture of the whole country and further wide-spread, multi-center studies are required. The 5-day training program has been effective. But strengthening of the training infrastructure, capacity building and refresher training programs are required. Lastly, frequent quality control surveys can ensure continued excellence of this program.

Authors' contributions

Dr. FSJ was involved in the study design, data collection, data analysis and interpretation and manuscript preparation. Prof. AA was involved in the study design and data collection. Prof. KS was involved in the study design and data collection. Dr. AR was involved in data analysis, data interpretation and manuscript preparation. Prof. FD was involved in study design and mentoring. All authors read and approved the final manuscript.

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