

Knowledge of Partograph Recording and Interpretation and Its Documentation Status in Samdrup Jongkhar District, Bhutan

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Abstract

Background: The study aimed to assess the knowledge of partograph recording and interpretation, partograph utilization and documentation status in the district. **Methods:** A retrospective study of compiled partographs during the last five years (2013-2017) was conducted to assess the documentation status. This was followed by an intervention study conducted using a self-administered questionnaire. Pretest was conducted to obtain the baseline scores. An intervention in the form educational session on partograph recording and interpretation was conducted which was followed by administration of post-test to obtain the end-line scores. The mean differences in the knowledge scores were compared using paired sample T-test. **Results:** Over one-third (37.5%) of the participants reported lack of refresher courses as the key challenge in use of partographs and only 9.6% of the partographs were found to be complete. Majority (80.4%) of them had a poor level of knowledge during the pre-test, which reduced to 7.1% after the intervention. Paired sample T-test detected significant difference in the mean knowledge scores between the pretest and the post test. **Conclusion:** Only 54% of the total deliveries were monitored using a partograph and over 90% of these partographs were incomplete. Majority of the participants had a poor level of knowledge during the pre-test.

Keywords: Knowledge; Partograph; Recording and Interpretation; Samdrup Jongkhar, Bhutan

Introduction

Partograph is a graphical chart that facilitates monitor the intra-partum period and serves as a reliable tool for the health workers in identifying the complications.^[1-3] Partograph is an integral tool comprising of maternal and fetal well-being, progress of labor and medication history which allows for a rapid review during active phase of labor.^[4] Over 200 million women become pregnant annually^[5] and around 585,000 maternal deaths occur as a result of complications related to pregnancy and childbirth.^[6,7] About 99% of maternal death occurs in developing countries of which 62% occurs in Sub-Saharan Africa and 24% in South East Asia.^[8] Bhutan made exceptional progress in reducing the maternal deaths from 900 deaths per 100,000 live births in 1990 to 148 in 2015 reflecting an average annual decline of 7.4%.^[8] Despite these reductions, postpartum hemorrhage remains the leading cause of death which is otherwise preventable.^[9] The World Health Organization (WHO) recommends that every woman be monitored during the intra-partum period using the WHO modified partograph.^[10] An accurate record keeping and interpretation enables effective communication between health professionals aiding in continuity of care.^[11] However, studies have reported the lack of knowledge on partograph.^[3,12,13] which results in poor

utilization.^[14-18] Very little is known regarding the knowledge and utilization of partograph in Samdrup Jongkhar District, Bhutan. This study assessed the knowledge of partograph recording and interpretation, partograph utilization in the district and effectiveness of the hands-on training.

Methods

The study was conducted using two different study designs simultaneously in May 2018. First, a retrospective study of compiled partographs during the last five years (January 2013-December 2017) was conducted to assess the documentation status. Total number of deliveries conducted in each health facility was obtained from the birth register maintained at the respective health facility. Delivery cases such as elective caesarean section, emergency caesarean section prior to active phase of labor and women who delivered on the way to health center were excluded from the review. Partographs were reviewed by the investigators and each parameter was recorded as 'Complete' 'Incomplete' or 'Blank' based on the National Standards of Midwifery Practice for Safe Motherhood, 2009.^[19]

This was followed by an intervention study which assessed the knowledge of midwifery trained health professionals (Health Assistants and Nurses) on partograph recording and interpretation. This design was chosen over cross-sectional study to understand the effectiveness of the hands-on training as the requirement of such training was agreed during the annual district health conference conducted on 4th May 2017. All the 12 health facilities in Samdrup Jongkhar were included as study sites. Health professionals who were absent, sick, on leave, trainings and workshops were excluded from the study. Therefore, a total of 56 health professionals working in various health facilities were taken as participants in this study. Data were collected using a validated self-administered questionnaire. A pre-test was conducted to obtain the baseline scores following which an intervention in the form of educational session with hands-on training on partograph recording and interpretation was conducted. Post-test was administered to obtain the end-line scores. Data entry was done using Epi-Data 3.1 and analyzed using SPSS. Descriptive statistics are presented as frequencies, proportions, means, percentages, and standard

deviations. Knowledge was classified as 'good', 'moderate' and 'poor' using Benjamin Bloom classification of cognitive skills. Paired sample T-test was used to compare the mean difference in knowledge scores between pre-test and post-test. Ethical clearance was granted by the Research Ethics Board of Health (REBH), Ministry of Health, Thimphu, Bhutan (Ref. No.: REBH/Approval/2017/098). Anonymity of the participants was maintained throughout the study.

Results

The mean age of the participants was 30 (SD; 7.13) years and over half of them (55.4%) were male. Diploma was the highest level of qualification for 60.7% of the participants and about two-thirds (66.1%) of the participants completed their professional education from Bhutan. Over one-third (37.5%) of them pointed out that lack of refresher course was the main challenge in using the partographs (Table 1).

Table 1: General Information (n=56)

Characteristics	Frequency	Percent
Age		
≤ 29	25	44.6
30-39	22	39.3
≥ 40	9	16.1
Mean 30.00, SD 7.127		
Gender		
Male	31	55.4
Female	25	44.6
Highest Education		
Certificate	18	32.1
Diploma	34	60.7
Bachelors	4	7.1
Country of Education		
Bhutan	37	66.1
India	18	32.1
Thailand	1	1.8
Number of years in service		
1-5 years	32	57.1
6-10 years	10	17.9
11 and above	14	25
Median 4.00, SD 8.462		
Position title		
Nurse	37	66.1
Health Assistant	19	33.9
Challenges in using partograph		
No refresher course	21	37.5
Inadequate staff	16	28.6
Inadequate delivery workload	9	16.1
Did not comment	10	17.9

Majority (80.4%) of the participants had a poor level of knowledge during pre-test which reduced to 7.1% at post-test (table 2).

Table 2: Knowledge comparison (n=56)

Knowledge level	Pre-test		Post-test	
	n	%	n	%
Poor (0-9 scores)	45	80.4	4	7.1
Moderate (10-12 scores)	10	17.9	7	12.5
Good (13-15 scores)	1	1.8	45	80.4

The difference in mean knowledge scores between pre-test and post-test was compared by a paired sample T-Test. The mean difference was 5.7 and was found to be statistically significant (Table 3).

Table 3: Mean difference in knowledge score before and after the educational session

Activity	n	Mean	SD	Mean Difference				
				Mean	SD	95% CI	p-value	
Post-test	56	13.13	2.00	5.70	2.93	4.91	6.48	0.000
Pre-test	56	7.43	2.24					

The study observed a huge discrepancy in the number of deliveries recorded and partograph compiled. Only 54% of the deliveries were monitored using partograph (Table 4).

Table 4: Partograph utilization

	n	%
Total deliveries recorded	1618	100.0
Deliveries monitored using partograph	874	54.0
Deliveries not monitored with partograph	744	46.0

Parameter-wise assessment of the compiled partographs showed that fetal well-being was the most incomplete parameter (75.9%) while 13% of bio data was blank. Only 9.6% of the partographs had all the five parameters complete (Table 5).

Table 5: Partograph documentation status (n= 874)

Parameter	Status	n	%
Bio-data	Complete	199	22.8
	Incomplete	561	64.2
	Blank	114	13.0
	Total	874	100.0
Fetal Well Being	Complete	162	18.5
	Incomplete	663	75.9
	Blank	49	5.6
	Total	874	100.0
Progress of Labor	Complete	271	31.0
	Incomplete	588	67.3
	Blank	15	1.7
	Total	874	100.0
Medication	Complete	736	84.2
	Incomplete	125	14.3
	Blank	13	1.5
	Total	874	100.0
Maternal Well Being	Complete	237	27.1
	Incomplete	605	69.2
	Blank	32	3.7
	Total	874	100.0
All parameters Complete		84	9.6

Discussion

The study found that most of the plotted partographs did not meet the standard level as required by National Standards of Midwifery Practice for Safe Motherhood, Ministry of Health, Bhutan.^[19] Of the 874 partographs reviewed, only 9.6% were complete or met the standard of approved practice. Studies conducted in nine facilities in Bangladesh, Guinea, Mali, Niger, and Uganda found that less than 5% of the partographs were complete.^[20] Several other studies have reported the poor/incomplete charting of partograph.^[2,7,14-18,20] Among the five parameters, fetal wellbeing was the most incomplete. Studies have reported the inadequacies in monitoring of fetal wellbeing using partograph.^[14,16,17] The study found that 13.0% of the bio-data were left blank which is important for patient identification and to reduce confusion. Partographs were full of

illegible and unclear handwritings, unapproved symbols and acronyms. This suggest of complacency among the health professionals. Documentation is another form of communication for continuity of care in a clinical set.^[11] Poor documentation is suggestive of ineffective communication among health professionals.

Majority of the participants had a poor level of knowledge during the pre-test and over one-third of them pointed that main challenge in utilization of partograph was lack of refresher courses. Similar studies have reported the poor level of knowledge during the pre-test.^[12,13] Monitoring using partograph during intra-partum is mandatory in Bhutan and the WHO modified Partographs were available in all health facilities but were sub-optimally used. There was a huge discrepancy in number of deliveries recorded in birth

register and compiled partographs. Only 54% of the deliveries were monitored using the partograph which suggest that the health professionals were unaware about the importance on record keeping for research, innovation and Medio-legal cases. A study conducted in 8 health facilities in south western part of Uganda reported that only 69.9% of total deliveries were monitored using partograph.^[16] Studies conducted in other countries have also reported the poor utilization of partograph.^[21,22]

The mean difference in the knowledge scores between pre-test and post-test were found statistically significant in this study. This suggest that periodic refresher courses can enhance their understanding of partograph documentation and interpretation. Statistically significant difference between the pre-test and the post-test have been documented in the literature.^[12,13,23] Evidences show that health professionals who got on job training performed better than those who did not.^[11,24,25] The study had one major limitation. The retrospective component did not measure the outcome of mother and the baby. Positive birth outcomes have been reported when deliveries were monitored using partograph.^[7]

Conclusion

Only 54% of the deliveries were monitored using a partograph and over 90% of these partographs were incomplete. Majority of the participants had a poor level of knowledge during the pre-test. Refresher courses are essential at regular intervals to improve partograph recording and interpretation. Regular monitoring by the concerned authorities is required to improve the compliance to partograph utilization.

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