

To Assess the Effective usage of Partogram for Labouring Women in Wah Cantt

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Abstract

Objective: To determine and to assess the completeness & accuracy of filled partograms according to the modified WHO partograph standard for optimal intrapartum care of women.

Methodology: This retrospective descriptive study was conducted by Wah Medical College in POF hospital (affiliated with WMC) Wah Cantt from 1.11.2017 to 1.02.2018. The modified WHO partograph was used as the standard. Data was collected by convenient sampling. All labouring women meeting the inclusion criteria during the study period were included in the study. The number of labouring women in 24 hrs was recorded daily. The files of labouring women were checked to see whether partograms were plotted & attached in the files or not. All the attached partograms were collected and analysed for their completeness and accuracy according to the standard protocol. The data was recorded and entered on SPSS for further analysis. The analysis was done by SPSS software. Descriptive statistics with frequency count and percentages were used to analyze the data.

Results: Out of 325 labors, partographs were used in 312 (96%) labours and were not used in 13 labours. 75 (24%) partographs were complete. 237 (75.96%) partographs were incomplete. Among 237 incomplete partograms, 207 (87.34%) were helpful & 30 (12.65%) were unhelpful in decision making regarding labour management.

Conclusion: Partogram uptake was good but the majority of the partograms were incomplete or inaccurate when compared to the standard(modified WHO partogram). Most of the incomplete partographs contained enough important information to be helpful in decision making for labour management.

Keywords: Utilization of Partogram, birth care.

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Introduction

Every year approximately 536,000 women die due to obstetric related causes. It means one woman dying each minute of every day.¹ The majority of these deaths are from developing countries. The common causes are hemorrhage, preclampsia/eclampsia, unsafe abortion, sepsis and obstructed labour.²

Prolonged labour results in obstructed labour which is one of the major causes of maternal deaths.³ Optimal care and monitoring during labour assists in early detection and management of such complications.⁴

Peripartum care provided by a skilled birth attendant and timely referrals without delays to higher level of care play important role in preventing such deaths. Partogram (partograph) is also used in this conjunction.⁵

WHO recommends partogram to record maternal/fetal wellbeing monitoring, progress of labour and to recognize any abnormalities for further action.⁶ The skilled birth attendant should know the correct use of partograph.⁷

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The concept of partogram was originally introduced by an obstetrician, E. A Friedman. It was improved by R.H.Philpott in 1971. He used alert and action lines on Friedmans graph. WHO recommended partogram for prevention of prolonged labour in 1994.⁸ Since then many partographs have been developed, more recently even e-partograph but the modified WHO partograph is the most popular & considered as standard in developed as well as in the developing countries.

Modified WHO Partograph is a printed graph on paper. It is a simple and useful tool for monitoring labour. The plotting of partograph should be started when the woman is in active labour (cervical dilatation reaches 4cm). The alert and action lines are already printed 4 hours apart on the partograph. The cervix is expected to dilate 1cm /hour minimum in active labour. If the plot of actual cervical dilatation of the women reaches the action line then it indicates some action to be taken. The action could be to augment labour, instrumental delivery or caesarean section.⁹ It is an important tool to assist intrapartum caregivers to record their findings on a standard form and provide a visual assessment of labour progress to make decisions regarding the management of labour.¹⁰ Correct use of partograph helps in decreasing emergency caesarean by 3%, reducing prolonged labour by 41%, & decreasing the use of oxytocin by 54%.¹¹ There is suboptimal use of partogram in the developing world despite its advantages and WHO recommendations.¹⁰

Many studies in the past show either poor utilization of partograph or incomplete filling of partograph, not up to the standard as recommended. Inadequate or no knowledge about partograph, shortage of staff or partograph in labour ward are major reasons for suboptimal use of partograph in the developing world.¹² Complete & accurate filling of partogram (record of fetal/maternal wellbeing & progress of labour according to the standard (WHO) recommendation is necessary to make appropriate and timely decisions regarding the management of labour. This study was done to determine the use of partograph for intrapartum monitoring and to assess the completeness & accuracy of plotting of partographs according to the modified WHO partograph. Hence indirectly assessing the quality of intrapartum care.

Methodology

This retrospective descriptive study was conducted by Wah Medical College in POF hospital (affiliated with WMC) in Wah cantt for duration of 3 months, from 1st

Nov ,2017-1st Feb 2018. The modified WHO partograph protocol was used as a standard for comparison.

The technique of filling of modified WHO Partogram^{13,14} was used as a standard to analyze partograms included in the study for level of their completeness and accuracy. Inclusion criteria included all low & high-risk women who delivered in the POF hospital labour room during the study period.

Exclusion criteria included labouring women with already diagnosed intrauterine deaths, labouring women with antepartum haemorrhage, women who delivered in the Gynae Emergency & emergency caesareans directly sent to OT from Gynae Emergency were excluded from the study.

Data was collected by convenient sampling. All labouring women meeting the inclusion criteria during the study period were included in the study. Total no of labouring women in 24 hrs (8am-2pm) & (2pm-8am) were recorded in the respective performas daily and counter checked with the delivery register daily so that no labouring woman was missed.

Partographs were supposed to be plotted for each labouring woman and attached in each file. Partographs were plotted by postgraduate trainees & house officers on duty in labour room for women in active labour (4cm dilated and above) upto delivery or decision of LSCS.

The doctors were given weekly training regarding standard protocol for filling of partogram according to the modified WHO partogram as well as weekly feedbacks about the analyzed partograms during these 3 months. The partogram availability was ensured in the labour room each day.

Partograms were collected from the files and analyzed by senior consultants to assess their level of completeness & accuracy according to the standard of modified WHO partogram. The number of partograms attached /not attached in the file and level of completeness /accuracy of partogram for each laboring woman was recorded. The analysis for each (total of 14 components) component of the partogram was done separately. Frequencies /percentages were calculated for each component to assess the level of completeness and accuracy according to the standard. If even one of the sections of the partogram was not filled or incorrectly filled (not acc to the protocol), it was designated as incomplete. Based on the information provided by the partograms, they were labelled as

Complete; if all the sections were filled completely & accurately according to the standard protocol of modified WHO partograph.

Incomplete; if all the sections were not filled /or inaccurate according to the standard protocol. The incomplete partograms were further analyzed to assess whether the information recorded on them was helpful or unhelpful in making decisions for labour management. They were labelled as incomplete helpful & incomplete unhelpful.

The data was recorded and entered on SPSS version 21.0. Descriptive statistics with frequency count and percentages were used to analyze the data.

Results

Total 325 labouring women were included in the study. Uptake of partograph was 96% (312). 75 (24%) partographs were complete & 237(75.96%) partographs were incomplete. Among the 237 incomplete partographs, 207(87.3%) partographs were helpful & 30(12.6%) partographs were unhelpful in decision making regarding the labour management.

The most recorded components were patient identification, fetal heart rate, liquor color, cervical dilatation, descent, time, contractions, drugs /fluids & maternal BP/temperature. While moulding, oxytocin, maternal pulse & urine dipstick were not optimally recorded.

Table I: Partograms filled & attached in the files of laboring patients.

Partograms filled and attached in files	312 (96)
Partograms either not filled or not attached in files	13 (04)
Complete Partograms	75 (24.04)
Incomplete	237 (75.96)
Incomplete partograms	237(75.96)
Incomplete helpful	207(87.34)
Incomplete unhelpful	30(12.65)

Table II: Level of completeness & accuracy of each section of partograph

Sections in partograph	Documented	Not documented
Pt identification	300 (96.2)	12 (3.8)
Fetal heart rate	291 (93.3)	21 (6.7)
Liquor color	283 (90.7)	29 (9.3)
Moulding	203 (65.1)	109 (34.9)
Cervical dilatation	295 (94.6)	17 (5.4)

Descent	291 (93.3)	21 (6.7)
Time	308 (98.7)	4 (1.3)
Contractions	307 (98.4)	5 (1.6)
Oxytocin	223 (71.5)	89 (28.5)
Drugs/fluids	303 (97.1)	9 (2.9)
Maternal pulse	171 (54.8)	141 (45.2)
Maternal BP	302 (96.8)	10 (3.2)
Maternal temperature	293 (93.9)	19 (6.1)
Urine dipstick	257 (82.4)	55 (17.6)

Discussion

Our results showed that the uptake of partograph by the intrapartum caregivers in our study was good Out of 325 labours, partographs were utilized in 312(96%) labours.

In a study conducted in Addis Ababa, partographs were utilized up to 50% for intrapartum monitoring.¹⁵ A study conducted somewhere else showed only 8.4% utilization of partographs.¹⁶ A study in Pakistan showed only 3% of usage of partographs in monitoring labour.¹⁷

As far as the level of completion of partographs was concerned, our study showed that only 24 % of partographs were accurately completed according to the standard. While 75.96% were incompletely or incorrectly filled. 29 % of partographs were correctly filled in a similar study in Amhara region¹¹ In another study 2% fetal heart rate was recorded, 43.9% of the cervical dilatation, 23.6 % of uterine contractions and 18 % of maternal blood pressure (BP) were plotted on partograph according to the protocol.¹² In another study, fetal heart rate was documented in 80.88%, cervical dilatation and fetal descent in 11.29% & 23.20 % respectively. Maternal pulse, BP & temperature documented were 50.16%, 43.26% & 35.11% respectively.¹⁸

In our study, among the incomplete partographs, the most poorly documented portion was of maternal pulse (54.8%) followed by moulding (66%) & documentation of oxytocin infusion (71.5%).

The most correctly documented sections on partographs were of uterine contractions (98%), time (98%) & drugs, I/V fluid section (97.1%).

The 2nd best documented were maternal BP (96.8%), cervical dilatation (94.6%), fetal descent (93.3%) & fetal heart rate (93.3%). In this regard, our study showed promising results as compared to the other studies.

It is important to mention that if even one of the sections of partograph was not filled or incorrectly filled

(not acc to the protocol), it was designated as incomplete.

Our standard was 100% or none at all for each section of partograph. No wonder we had low no of complete partographs and a high no of incomplete partographs. This should be the standard in actual practice, only in that way we can effectively audit & improve our intrapartum care.

Further observation made was that among the 237 incomplete partographs, 207 partographs were incomplete but contained enough data to qualify them as helpful for decision making. Only 30 were incomplete to an extent that they were not helpful or misleading in decision making.

The helpful data comprised of regular fetal heart rate markings, liquor color, 1st marking of cervical dilatation on alert line, marking of fetal descent with time, uterine contractions, maternal BP & temperature. This information was useful in deciding about the mode of delivery or diagnosing delay in the progress of labour and helpful in instituting measures to rectify the situation even though if the partogram was not complete.

It could be seen in the labour room statistics of these 3 months that there were 221 SVDs, 13 instrumental deliveries & only 10 emergency caesareans from the labour room in that period.

There were only 8 NICU admissions, from the cases included in the study. 03 babies were preterm, 3 born to mothers with gestational diabetes & 2 with minor anomalies for observation. There was no intrapartum intrauterine death during the period. This data showed that the intrapartum care was not suboptimal, even if not 100%.

It could be because most of the incomplete partographs still provided important information for intrapartum monitoring for timely decisions. This additional observation was consistent with a similar study done in a tibetan hospital where their results revealed 10 % of partograph as complete and accurate, 60 % incomplete and helpful partographs & 30% incomplete and unhelpful partographs.¹⁹

In our study, the care givers monitored & documented most of the important observations regarding labour but perhaps did not pay much attention to maternal pulse, fetal moulding and urine dipstick analysis as they were documented least frequently.

The maternal pulse is the first to deteriorate in most of obstetric emergencies followed by fetal heart rate and blood pressure (ie, laboring women with previous one caesarean or with APH). The fetal moulding indicates cephalopelvic disproportion. Maternal urine dipstick analysis gives important clues regarding dehydration, gestational diabetes and preeclampsia especially in non-booked labouring women admitted through emergency although it also depends upon the frequency of maternal urine passed.

The importance of any section of the partograph can't be ignored as incomplete information may lead to the wrong decision. Perhaps motivation of the caregivers is required as found in another similar study.²⁰

The electronic version of partograph can be accessed through smart phones or computer devices. A study demonstrated that the e- partograph is effective and feasible and user rate effectively improved by using e-partographs.²¹ May be more studies on e-partograph need to be done to validate its usefulness. Emphasis on motivation & realization of the importance of the role of complete and accurate filling of partographs for intrapartum care should be advocated. More local studies regarding partograph utilization should be conducted.

Conclusion

The partogram uptake was good in the study. The majority of the partograms were incomplete /inaccurate when compared with the modified WHO partogram. Most of the incomplete partograms contained enough important information to be helpful in decision making regarding labour management.

Continuous training & motivation of intrapartum caregivers regarding partograph filling according to the standard & periodic audits regarding effective usage of partographs is required to achieve optimal intrapartum management.

References

1. United Nations; The Millennium Development Goals report .New York United Nations Department of Economic and Social Affairs .2009
2. World Health Organization. Trends in maternal mortality:1990-2015.Geneva, Switzerland
3. Central Statistical Agency Federal Democratic Republic of Ethiopia. Demographic and Health Survey: Key indication Report.Addis Adaba, Ethiopia.2016
4. Palo SK, Patel K, Singh S, Priyadarshini S, Pati S. Intrapartum monitoring using partograph at secondary level public health

- facilities—A cross-sectional study in Odisha, India. *Journal of family medicine and primary care*. 2019;8(8):2685.
5. Salter SJ, Cox MJ, Turek EM, Calus ST, Cookson WO, Moffatt MF, et al. Level of Partograph completion and healthcare workers' perspectives on its use in Mulago National Referral and teaching hospital, Kampala, Uganda. *BMC Health Serv Res*. 2019;19: 107 <https://doi.org/10.1186/s12913-019-3934-3>
 6. Opiah MM, Ofi A B, Essien EJ, Monjok E. Knowledge and utilization of the partograph among midwives in the Niger Delta region of Nigeria. *Afr J Reprod Health*. 2012;16(1):125-132.
 7. World Health Organization. Making pregnancy safer; the critical role of the skilled attendant: a joint statement by WHO, ICM and FIGO; WHO:2004
 8. World Health Organization partograph in management of labour. World Health Organization Maternal Health and Safe Motherhood Programme. *Lancet*. 1994;343(8910):1399–404. Doi:10.1016/s0140-6736(94)92528-3
 9. Nwaneri A, Ndie EC, Ehiemere OE, Ezenduka PO, Emeh A. Evaluation of Factors Affecting the Utilization of Partograph by Nurses/Midwives in Primary/Secondary Health Facilities in Enugu Metropolis. *Gynecol Obstet (Sunnyvale)*. 2017;7(8):3.
 10. Fawole A, Dand A, Hunyinbo K. Utilization of partograph in Primary Health Care in South Western Nigeria: *Niger J Clin Pract* 2010;13:200-204.
 11. Abebe F, Birhanu D, Awoke W, Ejigu T. Assessment of knowledge and utilization of the partograph among health professionals in Amhara region, Ethiopia. *Sci J Clin Med*. 2013;2(2):26-42.
 12. Eshetu K, Hussen E, Dulla D. Magnitude of partograph use and associated factors among obstetric care givers in public health institution in Sidama Zone, southern Ethiopia. *Divers Equality Health Care*. 2017;14(6):316-23.
 13. WHO Reproductive Health Library. WHO recommendation on the use of active phase partograph with a four-hour action line for monitoring the progress of labour. (May 2014). The WHO Reproductive Health Library; Geneva: World Health Organization.
 14. World Health Organization; The WHO Partograph Managing Prolonged and Obstructed. Midwifery education modules - second edition .2008 http://whqlibdoc.who.int/publications/2008/9789241546669_4_eng.pdf
 15. Yisma E, Dessalegn B, Astatkie A, Fesseha N. Completion of the modified World Health Organization (WHO) partograph during labour in public health institution of Addis Ababa, Ethiopia. *Reprod Health*. 2013;10:1-7
 16. Ogwang S, Karyabakabo ERZ. Assessment of partogram use during labour in Rajumbura health subdistrict, Uganda. *Afr Health Sci*. 2009. I:S27-S34.
 17. Agha S, Fitzgerald L, Fareed A, Rajbhandari P, Rahim S, Shahid F, et al. Quality of labor and birth care in Sindh Province, Pakistan: Findings from direct observations at health facilities. *PLoS ONE* 2019;14(10):e0223701. DOI: 10.1371/journal.pone.0223701
 18. Dhanushka Jayaweera, Clinical Audit on Effective Usage of Partogram in Obstetric Unit B of DGH-Kalutara from 01st March 2016 to 31st May 2016. *INT J CLIN EXP MED*. 2017.
 19. Mercer SW, Sevar K, Sadutshan TD. Using clinical audit to improve the quality of obstetric care at the Tibetan Delek Hospital in North India: a longitudinal study. *Reproductive health*. 2006 ;3(1):4.
 20. Choudhary A, Tanwar M. Partogram and its relevance in modern obstetrics. *Int J Reprod Contracept Obstet Gynecol* 2019;8:1500-4.
 21. Rahman A, Begum T, Ashraf F, Akhter S, Dewan Md, Hoque E, et al. Feasibility and effectiveness of electronic vs. paper partograph on improving birth outcomes: A prospective crossover study design. *PLoS One*. 2019; 14(10): e0222314. doi: 10.1371/journal.pone.0222314