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Validation of Observation Sheets to Measure the Accuracy of Partograph Documentation

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Abstract: Background: Partographs are essential for monitoring labor progress, yet documentation is often incomplete or inaccurate, leading to delayed interventions and increased risks for mothers and newborns. However, there is currently no valid and reliable audit tool to evaluate the accuracy of partograph documentation. Objective: To develop and validate an audit tool for assessing the completeness and accuracy of partograph documentation. Methods: This study employed a Research and Development (R&D) design in four stages: (1) instrument development based on the 1994 WHO partograph template; (2) content validation by a panel of experts (obstetricians, senior midwives, and midwifery lecturers); (3) validity testing with 30 practicing midwives; and (4) reliability testing using Cronbach's alpha. The instrument consisted of a 20-item checklist assessing documentation quality. Results: Expert review confirmed all items as valid. The validity test showed r-count values greater than the r-table (>0.361), and the reliability test yielded a high Cronbach's alpha of 0.976, indicating excellent internal consistency. Conclusion: The developed audit tool is valid and reliable for evaluating the accuracy of partograph documentation. It can be applied in routine audits, quality control, and as an educational resource to strengthen healthcare workers' competence in standardized, timely labor documentation.

Keywords: partograph, audit tool, validation, documentation quality

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Introduction

Maternal mortality refers to deaths caused by complications from pregnancy, childbirth, and the postpartum period. Research findings from Kenya revealed that the main complications were hemorrhage (34.70%), eclampsia (20.80%), and sepsis (15.80%). Mothers who are not monitored using a partogram, have reactive HIV status, are in the postpartum period, are referred from peripheral facilities, and have low socioeconomic status are the most vulnerable (Masaba et al., 2025). Better detection of prolonged labor through stricter monitoring of regular contractions, delayed cervical dilation, delayed descent of the presenting part, arrested cervical dilation, and severe cephalopelvic disproportion or skull engagement (Mgaya et al., 2016). The World Health Organization (WHO) supported its use in all delivery wards in 1994, recommending the general use of partographs during labor, and the routine use of partographs greatly aids in making better decisions for the diagnosis and management of prolonged labor and obstructed labor and helps in the timely recognition of dystocia (Lee et al., 2023) (Ubom et al., 2025). Research in developing countries, including Ethiopia, has shown that the use of partographs remains poor despite the fact that these tools are simple and inexpensive to prepare for monitoring intrapartum labor

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(Bedada et al., 2020). Partographs are an important tool in routine practice in delivery rooms and provide a written record of the quality of maternal and child health management during labor and in the postpartum period (Merzougui et al., 2017).

A partograph is an important tool in monitoring labor, which aims to detect complications early and obtain timely interpretation of interventions. However, its effectiveness depends heavily on the accuracy and completeness of documentation during the labor process. A partogram is a sheet of paper containing information about fetal heart rate, uterine contractions, medications used, and other important factors that can help avoid lengthy descriptive notes (Elkheir et al., 2022). A study in Malawi found that among 1,070 partographs analyzed, 58.6% did not record the mother's blood pressure and 65.3% did not record body temperature. Additionally, 25.4% did not record molar or skull penetration, 14.9% did not record fetal heart rate, and 12% did not record fetal head descent (Mandiwa & Zamawe, 2017). Research findings in Uganda also revealed that approximately 8–13 parameters were properly documented in 71.5% of partographs. Approximately 38.9%, 24.7%, 99.7%, 22.5%, and 16% of partographs lacked documentation of obstetric risk factors, fetal heart rate, amniotic fluid color, uterine contractions, and cervical dilation. Approximately 12.1% of cervical dilations exceeded the action line, and 61.4% of partographs with cervical dilations exceeding the action line lacked documentation of the actions taken (Bahizi et al., 2023). In Ethiopia, there was no consistent use of partographs during labor; A study conducted at referral and teaching hospitals in Asella, Sidama Zone, Bale Zone, East Gojjam Zone, and Addis Ababa City Administration; showed that 26%, 50.7%, 70.2%, 53.85%, and 69% of participants used partographs to monitor labor progress, respectively. This inconsistent use of partographs is attributed to several factors such as participants' gender, age, years of clinical service, healthcare profession, and knowledge (Ayehubizu et al., 2022). They advocate the need for criteria-based clinical audits to improve the quality of partogram documentation (Ogwang et al., 2009). Poor and delayed documentation not only affects the quality of care, but also has legal and ethical implications. Filling out the partograph retrospectively, i.e., after delivery is complete, can obscure the actual clinical picture and hinder appropriate decision-making during delivery. Therefore, partograph documentation practices must be evaluated and improved through ongoing training, effective supervision, and routine audits.

This is intended to ensure that partographs are used optimally for the safety of mothers and babies during childbirth. Despite training and socialization on the use of partographs, retrospective filling, i.e., after the delivery process is complete, is still common in many countries, including Indonesia. Retrospective completion is not done due to lack of knowledge, but rather due to administrative pressure, workload, and fear of audit results. This has become a frequently reported phenomenon but is rarely addressed systematically. Several studies have also confirmed that the focus of health care systems in general is on the completeness of records as an administrative measure, rather than on the validity of the timing and process of recording as a clinical tool. This has led to the development of a "form-filling culture," thereby reducing the function of the partograph as a clinical decision-making tool. While many studies have assessed the completeness of partographs, few have specifically evaluated the timeliness (retrospective vs. real-time) of completion. Even fewer have been conducted with the specific aim of determining the validity of partograph timing and the accuracy of content in routine clinical practice. This is where there is an urgent need to develop measurement instruments (evaluation tools) that can assess the accuracy of documentation in terms of timing and content. Developing data-driven policy recommendations or interventions to improve the quality of childbirth care.

Method

Research Design: This study employed a research and development (R&D) design to develop and validate an audit instrument for assessing partograph documentation accuracy.

P-ISSN 2301-8372 | E-ISSN 2549-7081
https://jurnal.unimus.ac.id/index.php/jur_bid

Instrument Development: The instrument was developed based on the 1994 WHO partograph template. It was formatted as a checklist to assess the completeness of partograph entries using a two-point scale: not filled in or incorrect (0), and filled in correctly according to standards (1).

Validity and Reliability Testing: Validity testing was conducted through expert review involving obstetricians, senior midwives, and midwifery lecturers to ensure content accuracy and relevance. Reliability testing was performed during field testing using Cronbach's Alpha. A value greater than 0.7 indicated high reliability, between 0.5 and 0.7 indicated moderate reliability, and below 0.5 indicated low reliability.

Data Analysis: Data were analyzed using SPSS. Descriptive statistics, including frequency distribution and mean scores for each partograph indicator, were used to evaluate the completeness and accuracy of the documentation..

Result and Discussion

Table of parameters on the partogram and documentation of actions taken during active labor monitoring.

Table 1. Checklist of Parameters for Assessing the Completeness of Partograph Entries

Parameters for Assessing	Score	
	0	1
Name, mother's age	Incorrect spelling	Correct spelling of name, mother's age
gravida, para, abortion	Incorrect spelling Gravida, Para, Abortus	Correct spelling Gravida, Para, Abortus
Time and date of entry	Incorrect spelling Time and date of entry	Correct spelling Time and date of entry
time of rupture of membranes	Incorrect spelling time of rupture of membranes	Correct spelling time of rupture of membranes
the onset of abdominal cramps or contractions	Incorrect spelling the onset of abdominal cramps or contractions	Correct spelling the onset of abdominal cramps or contractions
gestational age	incorrect or not including the gestational age	correct including the gestational age
Fetal Heart	Incorrect spelling fetal heart	Correct spelling fetal heart
amniotic fluid	Incorrect spelling of amniotic fluid code	correct spelling of amniotic fluid code U : Utuh J : Jernih M : Mekonium D : Darah
molding of the fetal head	Incorrect spelling molding of the fetal head	correct spelling molding of the fetal head 0: The bones of the fetal skull do not touch each other. 1: The bones of the fetal skull only touch each other

P-ISSN 2301-8372 | E-ISSN 2549-7081
https://jurnal.unimus.ac.id/index.php/jur_bid

		2: The bones of the fetal skull are simply overlapping 3: The bones of the fetal skull are simply overlapping and cannot be repaired.
cervical dilation	Incorrect spelling cervical dilation	correct spelling cervical dilation Pada kolom besar kedua pada partograf adalah grafik dimana pencatatan kemajuan dilatasi serviks ditandai dengan tanda 'X'. The numbers 0-10 can be seen on the left side of the column. Each number represents a dilation of 1 cm. Along the bottom of the graph are the numbers 0-24, which indicate the hours. For mothers who arrive during the active phase, cervical dilation is marked on the alert line. If labor is progressing well, then the recording of the point "X" usually located to the left of the warning line
descent of the lowest part of the fetus	Incorrect spelling descent of the lowest part of the fetus	correct spelling descent of the lowest part of the fetus: In the column recording the descent of the lower part of the fetus, numbers 1-5 are adjusted using the fifth method. This recording is documented using the symbol 'O'. Perform a Leopold examination first before performing a VT (Vaginal Toucher) or internal examination because a large caput can give a false assessment.
time (hour) of examination	Incorrect spelling time (hour) of examination	correct spelling time (hour) of examination
uterine contractions	Incorrect spelling uterine contractions	Correct recording of uterine contractions: The uterine contraction column is located directly below the column for recording the descent of the lower part of the fetus. The uterine contraction column is recorded every 30 minutes for 10 minutes. During the 10 minutes,

P-ISSN 2301-8372 | E-ISSN 2549-7081
https://jurnal.unimus.ac.id/index.php/jur_bid

		medical personnel will record the number of contractions that occur during the 10 minutes and the duration of the contractions in seconds. The recording uses the following symbols; Mark the box with dots for contractions lasting less than 20 seconds. Mark the box with lines for contractions lasting 20-40 seconds. Shade the entire box for contractions lasting more than 40 seconds.
pulse	Incorrect spelling pulse	correct spelling pulse: "·": Symbol for recording the mother's pulse
blood pressure	Incorrect spelling blood pressure	correct spelling blood pressure: Blood pressure and temperature are checked every 4 hours. "Λ": Symbol for recording the mother's systolic blood pressure "V":Symbol for recording a mother's diastolic blood pressure
temperature	Incorrect spelling temperature	correct spelling temperature
urine	Incorrect spelling urine	correct spelling urine: The results of urine laboratory tests are also recorded in the partograph. Tests include urine output and the presence of acetone or protein.
tanda tangan dan nam penolong	Not signing the examiner column or only writing the name of the assistant and signature	Sign and write your name in the helper column.
partograph conclusion	incorrect interpretation of partogram results	Correct in interpreting the results of the partogram findings from the assessment criteria of maternal risk factors, fetal condition, maternal condition, and progress of labor (crossing the warning line or crossing the line Tindakan)
actions taken	actions incorrect	immediately refer the patient with appropriate stabilization and well-documented

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https://jurnal.unimus.ac.id/index.php/jur_bid

Each assessment criterion receives a score of 1 if correct and 0 if incorrect. The maximum score is 20. To assess that the midwife or health worker assisting in the delivery is correct in the documentation, they must receive a score of 20. Therefore, if they do not receive a score of 20, the accuracy of the partograph documentation is deemed incorrect. The validity of the Partograph Completion Assessment Checklist in terms of content was tested using an expert validation process involving obstetrician-gynecologists, senior midwives with professional education backgrounds, and academic midwifery lecturers. The validity of the instrument was tested on 30 independent midwives. The validity test used the Spearman test by comparing the calculated r value with the table r value. From the r product moment table with 30 respondents at a significance level of 5%, the table r value was 0.361.

Table 2. Results of item validity testing

Parameter	R count	R tale	Description
P1	0,890	0,361	Valid
P2	0,958	0,361	Valid
P3	0,922	0,361	Valid
P4	0,740	0,361	Valid
P5	0,890	0,361	Valid
P6	0,827	0,361	Valid
P7	0,801	0,361	Valid
P8	0,805	0,361	Valid
P9	0,594	0,361	Valid
P10	0,830	0,361	Valid
P11	0,915	0,361	Valid
P12	0,871	0,361	Valid
P13	0,832	0,361	Valid
P14	0,720	0,361	Valid
P15	0,642	0,361	Valid
P16	0,694	0,361	Valid
P17	0,922	0,361	Valid
P18	0,823	0,361	Valid
P19	0,958	0,361	Valid
P20	0,890	0,361	Valid

The validity test results in the table above consist of 20 parameters for assessing the completeness of the partogram filled out by 30 respondents. From the validity calculation results, 20 assessment parameters were declared valid, as can be seen from the calculated r being greater than the table r. A variable is considered reliable if its value is greater than 0.60; if it is smaller, the variable under study cannot be said to be reliable. The results of the reliability test on the research variables are as follows

Table 3. Reliability Testing

Cronbach's Alpha	N of Items
,976	20

The results of the reliability test show that Cronbach's alpha for this variable is higher than the base value, namely 0.976 > 0.60. These results prove that all parameters for assessing the partograph entries in the checklist are reliable.

P-ISSN 2301-8372 | E-ISSN 2549-7081
https://jurnal.unimus.ac.id/index.php/jur_bid

Table 4. Accuracy and completeness of documentation

Variable	Frequency (N=30)	Percentage
mother's name and age		
Yes	10	33,3
No	20	66,7
gravida, para, abortion		
Yes	12	40
No	18	60
date and time of admission		
Yes	11	36,7
No	19	63,3
time of rupture of membranes		
Yes	10	33,3
No	20	66,7
the onset of abdominal cramps or contractions		
Yes	10	33,3
No	20	66,7
Gestasional age		
Yes	11	36,7
No	19	63,3
Fetal Heart		
Yes	11	36,7
No	19	63,3
Amnion Fluid		
Yes	12	40
No	18	60
molding of the fetal head		
Yes	21	70
No	9	30
Serviks dilatation		
Yes	12	40
No	18	60
descent of the lowest part of the fetus		
Yes	12	40
No	18	60
inspection time		
Yes	13	43,3
No	17	56,7
uterine contractions		
Yes	14	46,7
No	16	53,3
Pulse		
Yes	13	43,3
No	17	56,7
blood pressure		
Yes	10	33,3

P-ISSN 2301-8372 | E-ISSN 2549-7081
https://jurnal.unimus.ac.id/index.php/jur_bid

Variable	Frequency (N=30)	Percentage
No	20	66,7
temperature		
Yes	12	40
No	18	60
urine		
Yes	11	36,7
No	19	63,3
signature and name of assistant		
Yes	14	46,7
No	16	53,3
partograph conclusion		
Yes	12	40
No	18	60
actions taken		
Yes	10	33,3
No	20	66,7

Based on the results of an audit of 30 partographs, it was found that most of the important components were not fully documented. Elements of the mother's identity, such as name and age, were only recorded in 33.3% of partographs, while obstetric data such as gravida, para, and abortus were only complete in 40% of cases. Initial patient admission information such as the date and time of admission (36.7%), the time of membrane rupture (33.3%), and the onset of contractions (33.3%) were also frequently omitted. Similarly, other important parameters such as gestational age (36.7%), fetal heart rate (36.7%), and amniotic fluid status (40%) showed low levels of documentation. Recording of fetal head engagement was the component with the highest percentage of complete documentation (70%), followed by uterine contractions (46.7%), attending physician's signature (46.7%), and time of examination (43.3%). However, other important parameters such as cervical dilation, descent of the fetal head, temperature, blood pressure, and urine were only fully recorded in 33.3% to 40% of cases. In fact, documentation of actions taken and partograph conclusions were only found to be complete in 33.3% and 40% of partographs, respectively. These findings indicate that there are still weaknesses in partogram documentation, which can impact monitoring and clinical decision-making during childbirth. This low level of completeness aligns with previous research indicating that factors such as healthcare workers' motivation, workload, supervision, and documentation skills can influence the quality of partogram completion (Elundu et al., 2024; Rahayu, 2020). Therefore, enhancing training, implementing regular supervision, and providing standardized and user-friendly partographs should be considered as part of efforts to improve the quality of midwifery services.

This study developed a checklist combined from the results of Archbald Bahizi's research. In Archbald Bahizi's study, 13 parameters were used to assess the completeness of partogram entries. These include obstetric risk factors, fetal heart rate, amniotic fluid condition, amniotic fluid color, meconium, cervical dilation, fetal head descent, contractions, vital signs and temperature, urine test, crossing the warning line or action line on the graph, actions taken, and documentation. Bahizi's research found that approximately 8–13 parameters were documented correctly in 71.5% of partographs. Approximately 38.9%, 24.7%, 99.7%, 22.5%, and 16% of partographs lacked documentation of obstetric risk factors, fetal heart rate, amniotic fluid color, uterine contractions, and cervical dilation. Approximately 12.1% of cervix measurements exceeded the action line, and 61.4% of partographs where cervical dilation exceeded the action line lacked documentation of the actions taken (Bahizi et al., 2022). This study developed 20 parameters to be measured to assess the completeness of partogram completion. These parameters

P-ISSN 2301-8372 | E-ISSN 2549-7081
https://jurnal.unimus.ac.id/index.php/jur_bid

include the mother's name, age, number of pregnancies and abortions, date and time of admission, time of membrane rupture, time of onset of labor, gestational age, fetal heart rate, amniotic fluid, meconium, blood pressure, temperature, urine, signature and name of the attending healthcare provider, partogram conclusion, and actions taken. In these parameters, we also consider the legal aspect, namely the presence of the signature and name of the birth attendant. This is important in case of a complaint, as it will be detected and facilitate the audit process. Not only does complete and accurate documentation aid in making appropriate clinical decisions, but it also serves as legal evidence in cases of medical litigation or complaints.

The parameters displayed by researchers are extremely important because they cover all aspects, including the condition of the mother, the condition of the fetus, the progress of labor, the findings of the partograph, stabilization, and appropriate referrals. The quality of the partogram used must be accurate, truthful, and complete in documentation. However, in many situations, most partograms are not filled out according to standards, implicitly failing to reflect the actual condition of the mother and fetus. For example, a study in Bangladesh found that partographs were not fully completed, with fetal heart rate, molarization, and cervical dilation not recorded in 39.0%, 80.0%, and 30.0% of all partographs, respectively (Khan et al., 2018). Similarly, a study in Uganda found that fetal heart rate was documented in 62 percent, cervical dilation in 57 percent, pulse rate in 20 percent, and blood pressure in 35 percent of mothers in active labor (Ziidah Namwaya, Susan Birungi, Elizabeth Namutebi, Elizabeth Ayebare, Mariam Namutebi, Sarah Muwanguzi, Enid Mwebaza, 2017). In Indonesia, a study at Sumber Waras Hospital in Cirebon found that only 54.1% of partographs were fully completed. Inadequate documentation can hinder the audit process and evaluation of midwifery service quality (Indah & Setiawan, 2022).

Another study found that when the cervical dilation chart was at or to the right of the action line, 65.3% of cases involved labor stimulation and 21.7% involved cesarean delivery (Bolbol-Haghighi et al., 2015). This aligns with the results of a study in the Southwestern region of Malawi, where out of a total of 1,070 partographs reviewed, 58.6% (n = 627) did not include maternal blood pressure recordings, and 65.3% (n = 699) lacked temperature documentation. The presentation was not recorded in 25.4% (n = 272) of partographs, fetal heart rate was not recorded in 14.9% (n = 159) of partographs, and fetal head descent was not recorded in 12.0% (n = 128) of partographs (Mandiwa & Zamawe, 2017). In Ziidah's study among 355 reviewed partographs, 79.1% had incomplete documentation of gestational age, 52.7% of gravidity, and 3.2% of parity. In approximately 61%, specific parameters for fetal monitoring, maternal monitoring, and labor progress were incomplete (Mukisa et al., 2019). Out of 7,170 records, 256 (3.57%) were completed with partographs. Maternal well-being documentation was low. For example, pulse rate was recorded in 20% of cases and blood pressure in 35%. Vaginal examination results were documented in 90% of cases upon admission but decreased to 57% during the first stage of labor. Similarly, fetal heart rate recording during the first stage of labor was 62% (Ziidah Namwaya, Susan Birungi, Elizabeth Namutebi, Elizabeth Ayebare, Mariam Namutebi, Sarah Muwanguzi, Enid Mwebaza, 2017).

Mukisa found the variables with the lowest compliance (≤33.3%) to be the mother's name and age, time of membrane rupture, time of onset of contractions, blood pressure, and actions taken. This indicates a disregard for basic information and clinical actions, which can have serious implications for assessment and decision-making during labor. Aspects of identity and initial monitoring often overlook basic information such as the mother's identity, gestational age, onset of contractions, and admission date, which tend to be incomplete. This can complicate initial assessment and recording of labor duration. Recording of clinical observation results is also suboptimal; important variables such as fetal heart rate, cervical dilation, fetal descent, and amniotic fluid are only recorded around 36–40%, yet these are crucial for assessing the condition of the fetus and mother. Research findings indicate that midwives understand the importance of using the partograph but do not use it effectively due to various factors. For example, in a study conducted in Uganda, health workers reported that they were unable to complete the partograph due to the large number of pregnant women and other staff responsibilities. Congestion in

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https://jurnal.unimus.ac.id/index.php/jur_bid

the delivery ward reduces the completion rate of the partograph. The availability of other monitoring tools, skill limitations, inadequate equipment and supplies, and the condition of mothers upon arrival at the hospital make the use and completion of the partograph a challenge (Mukisa et al., 2019).

Of the 177 partographs audited, 44.9 (25.4%) were complete, and admission data, date, and time were recorded on 112 (63.3%) partographs, while the mother's name was documented on 149 (84.2%) while parity and gravidity were recorded in 105 (59.3%) and 61 (35%) respectively. Cervical dilation and effacement were documented in 131 (74%) and 96 (54%) respectively. Mucus plug and caput were documented during uterine contractions in 87 (49.7%) and blood pressure in 23 (46.9%). There was a significant association between the importance of the partogram in labor management and the frequency of partogram use (χ^2 = 12.000, p = 0.030). Factors hindering completeness include increased workload, inefficient supervision, poor attitude, lack of motivation, and inadequate supervision. Training, supervision, motivation, and improving the midwife-to-patient ratio must be enhanced to improve partogram completeness (Sigei, 2018) Midwives who received on-the-job training were seven times more likely to use partographs than those who did not receive training (Tilahun et al., 2021). Midwives working in hospitals were 2.96 times more likely to use partographs than those working in health centers.

Conclusion

This study created and validated a partogram documentation accuracy audit tool that can be used to assess the quality of partogram recording by health workers. The validity test results showed that all items in the instrument had high validity. On the other hand, inter-rater reliability testing showed excellent consistency in assessment. Therefore, this tool is suitable for use in clinical practice and research to improve the quality of partogram documentation and assist healthcare workers in making appropriate decisions during childbirth. Interventions to improve compliance are needed, such as through training, supervision, or digital systems that guide completion.

References

Ayehubizu, L. M., Tibebeu, A. T., Fetene, M. T., Yohannes, S. H., & Yadita, Z. S. (2022). Partograph utilization and associated factors among obstetric care givers in governmental health institutions of Jigjiga and Degehabur towns, Somali region, Ethiopia: A cross-sectional study. *PLOS ONE, 17*(3), Article e0264373. https://doi.org/10.1371/journal.pone.0264373

Bahizi, A., Munguiko, C., & Masereka, E. M. (2022). The correctness and completeness of documentation of parameters on the partographs used by midwives in primary healthcare facilities in midwestern Uganda: A retrospective descriptive study. *Nursing Open, 10*(3), 1350–1355. https://doi.org/10.1002/nop2.1383

Bedada, K. E., Huluka, T. K., Bulto, G. A., & Yohannes Roga, E. (2020). Low utilization of partograph and its associated factors among obstetric care providers in governmental health facilities at West Shoa Zone, Central Ethiopia. *International Journal of Reproductive Medicine, 2020*, 1–9. https://doi.org/10.1155/2020/3738673

Bolbol-Haghighi, N., Keshavarz, M., Delvarianzadeh, M., & Molzami, S. (2015). Evaluation of the alert line of partogram in recognizing the need for neonatal resuscitation. *Iranian Journal of Nursing and Midwifery Research, 20*(5), 560–564. https://doi.org/10.4103/1735-9066.164513

Elkheir, M. F. A., Barakat, R. I., Abdelhafez, M. A., & Aldakdousy, K. A. G. (2022). The effect of use of a modified type of partogram on cesarean section rates: A randomized controlled clinical trial. *Egyptian Journal of Hospital Medicine, 89*(1), 4488–4494. https://doi.org/10.21608/ejhm.2022.258476

P-ISSN 2301-8372 | E-ISSN 2549-7081
https://jurnal.unimus.ac.id/index.php/jur_bid

Hailu, T., Nigus, K., Gidey, G., Hailu, B., & Moges, Y. (2018). Assessment of partograph utilization and associated factors among obstetric care givers at public health institutions in central zone, Tigray, Ethiopia. *BMC Research Notes, 11*(1), 710. https://doi.org/10.1186/s13104-018-3814-7

Indah, R., & Setiawan, D. (2022). Tinjauan kelengkapan formulir partograf di Rumah Sakit Sumber Waras Kabupaten Cirebon. *Jurnal Kesehatan Mahardika,* 9(1), 63–68. https://doi.org/10.54867/jkm.v9i1.103

Khan, A. N. S., Billah, S. M., Mannan, I., Begum, T., Khan, M. A., Islam, M., Ahasan, S. M. M., Rahman, J. N., George, J., Arifeen, S. E., Meena, U. S. J., Rashid, I., & de Graft-Johnson, J. (2018). A cross-sectional study of partograph utilization as a decision-making tool for referral of abnormal labour in primary health care facilities of Bangladesh. *PLOS ONE, 13*(9), Article e0203617. https://doi.org/10.1371/journal.pone.0203617

Lee, N., Flynn, J., Gao, Y., & Kildea, S. (2023). Comparing compliance with commencement and use of two partograph designs for women in active labour: A randomised controlled trial. *Women and Birth, 36*(1), e17–e24. https://doi.org/10.1016/j.wombi.2022.04.004

Mandiwa, C., & Zamawe, C. (2017). Documentation of the partograph in assessing the progress of labour by health care providers in Malawi's South-West zone. *Reproductive Health, 14*(1), 134. https://doi.org/10.1186/s12978-017-0401-7

Masaba, B. B., Mmusi-Phetoe, R. M., Rono, B., Muthiani, D. K., Taiswa, J., Ojiambo, S. L., Moraa, D., & Moturi, J. K. (2025). Maternal mortality determinants in rural Kenya: An audit of three hospitals. *Iranian Journal of Nursing and Midwifery Research, 30*(1), 135–139. https://doi.org/10.4103/ijnmr.ijnmr_255_22

Merzougui, L., Marwen, N., Barhoumi, T., Ltaeifa, A. B., Hannachi, H., Jaballah, R., & Fatnassi, R. (2017). Evaluation of the compliance rate of partograph use in a Tunisian maternity ward: A targeted clinical audit. *Pan African Medical Journal, 27*, 106. https://doi.org/10.11604/pamj.2017.27.106.10620

Mgaya, A. H., Kidanto, H. L., Nyström, L., & Essén, B. (2016). Improving standards of care in obstructed labour: A criteria-based audit at a referral hospital in a low-resource setting in Tanzania. *PLOS ONE, 11*(11), Article e0166619. https://doi.org/10.1371/journal.pone.0166619

Mukisa, J., Grant, I., Magala, J., Ssemata, A. S., Lumala, P. Z., & Byamugisha, J. (2019). Level of partograph completion and healthcare workers' perspectives on its use in Mulago National Referral and Teaching Hospital, Kampala, Uganda. *BMC Health Services Research, 19*(1), 481. https://doi.org/10.1186/s12913-019-3934-3

Ogwang, S., Karyabakabo, Z., & Rutebemberwa, E. (2009). Assessment of partogram use during labour in Rujumbura Health Sub-District, Rukungiri District, Uganda. *African Health Sciences,* 9(Suppl 1), 27–34.

Sigei, J. K. (2018). Completeness of partographs used by midwives in a sub-county hospital in Kenya. *Kenyan Journal of Nursing & Midwifery, 3*(2), 25–31.

Tilahun, A. G., Gebeyehu, D. G., Adinew, Y. Y., & Mengstu, F. W. (2021). Utilization of partograph and its associated factors among obstetric caregivers in public health institutions of Southwest Ethiopia. *BMC Pregnancy and Childbirth, 21*(1), 457. https://doi.org/10.1186/s12884-021-03822-5

Ubom, A. E., Nieto-Calvache, A. J., Malel, Z. J., & Nunes, I. (2025). FIGO position statement on the use of the WHO labor care guide versus the partograph. *International Journal of Gynecology & Obstetrics*. Advance online publication. https://doi.org/10.1002/ijgo.70151

Ziidah Namwaya, S., Birungi, S., Namutebi, E., Ayebare, E., Namutebi, M., Muwanguzi, S., Mwebaza, E., & Ssewanyana, R. (2017). Partograph initiation and completion: A criteria-based audit study in Uganda. *African Journal of Midwifery and Women's Health, 11*(2), 75–81.