Research Article

Usability, Acceptability, and Satisfaction of Indonesian Birth Attendants with the WHO 2020 Labour Care Guide: A Mixed-Methods Study

Josef Maria Seno Adjie, Sisca Indrianie

Department of Obstetrics and Gynecology
Faculty of Medicine Universitas Indonesia
Dr. Cipto Mangunkusumo General Hospital
Jakarta

Abstract

Objective: To assess the usability, acceptability, and satisfaction of Indonesian birth attendants in using the WHO Labour Care Guide (LCG) 2020.

Methods: This mixed-methods study was conducted from July to November 2023 across four affiliated teaching hospitals. Participants included birth attendants who had received training in the use of partographs or in normal delivery care (APN). Quantitative data were analyzed descriptively and presented in tables, while qualitative data from in-depth interviews were analyzed thematically.

Results: Fifty-nine participants (45 midwives and 14 doctors) received training on the use and completion of the LCG sheet. The participants applied the LCG to 120 patients, most of whom had spontaneous vaginal deliveries (78.3%). Overall, 40 participants (67.8%) found the LCG useful, and 42 (71.2%) reported satisfaction with its use. Qualitative interviews further revealed that although the tool was perceived as more comprehensive than previous partographs, participants identified challenges related to time demands and the need for repeated practice to master the new format.

Conclusion: This study represents the first Indonesian evaluation of the WHO LCG 2020, demonstrating positive usability and acceptability among birth attendants. Successful national adoption will require phased implementation, regular refresher training, streamlined documentation, and integration into policy and hospital systems to strengthen the quality of intrapartum care.

Keywords: doctors, labour care guide, midwives, partograph, usability testing.

Correspondence author. JM Seno Adjie. Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Indonesia. Email: jmseno@hotmail.com Telp: +6281219459613

INTRODUCTION

Over the last 20 years, numerous initiatives have been undertaken to reduce maternal and perinatal mortality and morbidity. One key strategy has been promoting childbirth in health facilities where mothers can receive high-quality care from skilled health professionals, thereby reducing the risk of complications.[1,2] Despite ongoing efforts, Indonesia still encounters significant obstacles in achieving its maternal health objectives. The 2020 Long Form Population Census estimated the Maternal Mortality Ratio (MMR) at 189 per 100,000 live births, substantially higher than the World Health Organization's Sustainable Development Goal (SDG) target of 70 per 100,000 live births by 2030. This gap highlights the need for not only broader service coverage but also substantial improvements in the quality of intrapartum care to ensure safer deliveries and better maternal outcomes.[3,4]

In line with the SDG targets, improving maternal health involves preventing birth complications and ensuring a positive birth experience.[2] Health care with good clinical governance provides better services for maternal and perinatal.[5] Continuous observation during labour is vital, and tools such as the partograph are commonly used to monitor labour progress and detect potential complications early.[1,2,6] The partograph is a visual tool that helps birth attendants monitor labour progress and quickly

detect deviations from normal that may risk the health of the mother or baby.[7–9]

In 2020, the World Health Organization introduced updates to paper-based labour monitoring tools by launching the Labour Care Guide (LCG).[10] WHO LCG 2020 has several changes and additions compared with the previous partograph (The Modified Partograph in 2000). The additions aim to provide a positive birth experience for mothers by incorporating supportive elements into the observation sheet.[2,10] The most notable change in WHO LCG 2020 is the absence of graphic data displays, such as alert lines and action lines, reflecting the understanding that each woman's birth experience is unique and cannot be generalized by a uniform line to determine labour progress or spontaneous labour failure. Instead, the concept of alert and action limits is now recorded numerically.[7,9,10]

Given that the Modified Partograph 2000 has long been a standard tool among birth attendants in Indonesia, the adoption of WHO LCG 2020 necessitates careful consideration of local practitioners' perspectives. This study, which evaluated the usability, feasibility, acceptability, and satisfaction of the WHO LCG 2020 in clinical practice, has the potential to significantly impact maternal health in Indonesia. The findings will inform recommendations for refining WHO LCG 2020 prior to its broader implementation in Indonesia, potentially leading to safer deliveries and better maternal outcomes.

INTRODUCTION

Over the past two decades, numerous initiatives have been undertaken to reduce maternal and perinatal mortality and morbidity. One key strategy has been the promotion of childbirth in health facilities, where mothers can receive high-quality care from skilled health professionals, thereby reducing the risk of complications. Despite these ongoing efforts, Indonesia continues to face significant challenges in achieving its maternal health goals. The 2020 Long Form Population Census estimated the Maternal Mortality Ratio (MMR) at 189 per 100,000 live births, which remains substantially higher than the World Health Organization's Sustainable Development Goal (SDG) target of 70 per 100,000 live births by 2030. This gap underscores the need not only to expand service coverage but also to substantially improve the quality of intrapartum care to ensure safer deliveries and better maternal outcomes.

In line with the SDG targets, improving maternal health involves preventing birth complications and ensuring a positive childbirth experience.[2] Health care services supported by good clinical governance can provide better outcomes for both maternal and perinatal health.[5] Continuous observation during labour is vital, and tools such as the partograph are commonly used to monitor labour progress and detect potential complications early.The partograph is a visual monitoring tool that assists birth attendants in tracking the progress of labour and promptly identifying deviations from normal patterns that may endanger the health of the mother or the baby.[7-9]

In 2020, the World Health Organization introduced an updated paper-based labour monitoring tool the Labour Care Guide (LCG).[10] The WHO LCG 2020 incorporates several modifications and additions compared with the previous version, the Modified Partograph (2000). These revisions aim to promote a positive birth experience by integrating supportive care elements into the observation sheet.[2,10] The most notable change in the WHO LCG 2020 is the removal of graphical features such as alert and action lines, reflecting the understanding that each woman's birth experience is unique and cannot be standardized using a single visual reference for labour progress or failure. Instead, alert and action thresholds are now documented numerically.[7-10]

Given that the Modified Partograph (2000) has long served as the standard tool among birth attendants in Indonesia, the adoption of the WHO LCG 2020 requires careful consideration of local practitioners' perspectives. This study evaluates the usability, feasibility, acceptability, and satisfaction related to the use of the WHO LCG 2020 in clinical practice. The findings have the potential to significantly influence maternal health in Indonesia by informing recommendations for refining the WHO LCG 2020 before its wider implementation ultimately contributing to safer deliveries and improved maternal outcomes.

METHODS

This study employed a mixed-methods design, combining a quantitative cross-sectional survey with qualitative in-depth interviews. The research was conducted from July to November

2023 in the Maternity and Emergency Rooms of the Department of Obstetrics and Gynecology at Dr. Cipto Mangunkusumo General Hospital and three affiliated teaching hospitals (Hospitals A, B, and C). Ethical approval was obtained from the Ethics Committee of the Faculty of Medicine, Universitas Indonesia (KET-828/UN2.FI/ETIK/PPM.00.02/2023), and informed consent was obtained from all participants. The study adhered to the principles of the Declaration of Helsinki and relevant institutional regulations.

The participants were birth attendants (midwives and first-year obstetrics residents) who had received prior training in the use of partographs or in normal delivery care (APN). Participants were recruited using consecutive sampling, with a minimum sample size target of 31. The inclusion criteria included practitioners directly involved in childbirth care for patients with singleton, cephalic, term pregnancies, cervical dilatation greater than 5 cm, and planned vaginal delivery. Although consecutive sampling facilitated recruitment within the study period, this approach may have introduced selection bias, thereby limiting the generalizability of the findings.

Training on the use of the WHO Labour Care Guide (LCG) 2020 was provided to all participating practitioners before data collection. Following the training, participants applied the LCG 2020 in intrapartum care for eligible patients and completed a structured questionnaire after each use. After five months of data collection, participants completed a final questionnaire and participated in in-depth interviews to evaluate their experiences and perceptions of the LCG 2020. These interviews aimed to assess the feasibility and acceptability of the tool among practitioners.

A validity assessment was conducted using face validity, involving a panel of experts and a general panel. Categorical univariate descriptive data are presented as frequencies, proportions, or percentages. Numerical data were tested for normality and analyzed using the Chi-square and Fisher's exact tests. Qualitative data from the interviews were analyzed thematically and reported narratively.

RESULTS

Quantitative Findings

Across the four participating hospitals, a total of 59 practitioners took part in the study, consisting of 76.3% midwives and 23.7% doctors/residents. The majority were female (93.2%), and most had more than five years of experience assisting childbirth (71.2%) (Table 1).

Table 1. Characteristics of Participating Practitioners

Characteristics	Hospital A		Hospital B		Hospital C		Hospital D		Total	
	N	%	N	%	N	%	N	%	N	%
Professional role										
Midwife	10	76.9	12	80	11	78.6	12	70.6	45	76.3
Resident doctor	3	23.1	3	20	3	21.4	5	29.4	14	23.7
Number of years of providing clinical care in labour (years)										
< 1	4	0	0	0	1	7.1	1	5.9	6	10.2
1-5	3	53.8	3	20	0	0	5	29.4	11	18.6
> 5	6	46.2	12	80	13	92.9	11	64.7	42	71.2
Gender										
Male	0	0	0	0	0	0	4	23.5	4	7.2
Female	13	100	15	100	14	100	13	76.5	55	92.8

After training, most practitioners agreed that the training was useful (64.4%), that they were capable of using the LCG (52.5%), and that the training manual was beneficial (61%)

The LCG was applied to 120 pregnant women aged 18–24 years (56%). Based on obstetric history, most women were primigravida (49.2%), followed by those with one or two previous births (36.7%), and those with three or more (14.1%). A total of 78.4% delivered by spontaneous vaginal delivery, 5.8% by instrumental vaginal delivery, and 15.8% by cesarean section. All babies were born alive (100%), with the majority being female (65.8%). Most newborns had a 5-minute Apgar score >7 (64.2%), and the majority weighed between 2500–4000 g (86.7%) (Supplementary Table 2).

When using the LCG during deliveries (n = 120), 55.8% of practitioners agreed that they could use the tool, 60.8% felt able to complete it correctly, 48.3% were satisfied using it, 56.7% reported that it helped in managing childbirth and neonatal care, and 55.8% were satisfied with the overall design of the LCG sheet.

Regarding satisfaction with specific sections of the LCG design, the identity section received the highest satisfaction rating (88.2%), while the baby section received the lowest (67.8%). Overall, 79.6% of practitioners expressed satisfaction with the LCG design.

After using the Labour Care Guide for three months, participants completed a System Usability Scale (SUS) questionnaire. The SUS scores ranged from 52.5 to 75, with a median score of 70. Overall, 39 practitioners (66.1%) rated the LCG above 70, indicating good usability (Table 2).

Table 2. System Usability Score (SUS)

SUS Score	N	%
0-70	20	33.9
>70	39	66.1

Analysis of the relationship between professional role, years of experience, and the perceived usefulness of the WHO LCG 2020 revealed no significant associations (p = 0.12) (Table 3).

Table 3. Relationship between Type of Profession and Length of Work with the Usefulness of using WHO LCG 2020

Variable	Usability		*P-value*
	Yes N (%)	No N (%)	
Professional role			
Midwife	29 (64.4)	16 (35.6)	0.75
Resident doctor	10 (71.4)	4 (28.6)	
Years of experience			
1-5	9 (52.9)	8 (47.1)	0.12
>5	31 (73.8)	11 (26.2)	

In contrast, there was a significant relationship between both professional role and years of experience with satisfaction in using the WHO LCG 2020 (p = 0.006 and p = 0.013, respectively) (Table 4).

Table 4. Relationship between Type of Profession and Length of Work with the Satisfaction of Using WHO LCG 2020

Variable	Satisfaction		*P-value*
	Yes	No	
Professional role, n (%)			
Midwife	28 (62.2)	17 (27.8)	0.006
Resident doctor	14 (100)	0 (0)	
Years of experience, n (%)			
1-5	16 (94.1)	1 (5.9)	0.013
>5	26 (61.9)	16 (38.1)	

Qualitative Findings

After collecting the questionnaire data, in-depth interviews were conducted to assess the feasibility and acceptability of the WHO LCG 2020 and to gather feedback for potential future implementation in Indonesia. Five Zoom discussion sessions were held with 14 participants (4 doctors and 10 midwives). The key findings are summarized below.

Overall, participants agreed that the WHO LCG 2020 was helpful in assisting childbirth management. They found numerical recording easier to complete than drawing graphs or shading, and several participants appreciated that the LCG provided more detailed and comprehensive monitoring, especially regarding maternal and neonatal needs. The action column at the bottom of the sheet was also considered useful for facilitating timely clinical responses whenever problems were detected.

Although the LCG 2020 was viewed as beneficial and patient-centered, most practitioners reported initial difficulty completing it and expressed the need for more training. The LCG's decision-making process requires effective communication and collaboration among practitioners, patients, and other healthcare staff, which often takes additional time and involves repeated consultations with specialists. The more detailed newborn section, particularly the heart rate deceleration component, also required longer observation times. Nevertheless, participants from all sites agreed that the LCG offered more comprehensive and patient-focused monitoring.

When asked about barriers to implementation, most participants cited time constraints due to an imbalance between the number of patients and available practitioners. Many were also responsible for managing gynecological patients, further limiting their focus on intrapartum monitoring. Several hospitals had begun adopting digital recording systems, which participants felt

increased their workload because they had to duplicate entries across multiple documentation systems. In addition, the old partograph sheets were still required, causing redundancy and delays in completing the LCG, which was often filled out retrospectively after delivery.

Participants provided several recommendations for improvement. Many suggested that third-and fourth-stage labour monitoring be added to the LCG, as in the previous partograph. Almost all requested that the LCG be translated into Indonesian for wider use. Some proposed expanding the recommended actions section to better guide interventions.

The participants also expressed hope that the WHO LCG 2020 could be formally adopted as a national hospital policy to replace the previous partograph, reducing duplication of records. They emphasized the importance of regular refresher training, similar to the Modified Early Obstetric Warning Score (MEOWS) program, noting that consistent training helps maintain uniform understanding. Several participants also suggested that instruction on using the WHO LCG 2020 be incorporated into midwifery and medical education curricula to ensure early familiarization and consistent practice across institutions.

DISCUSSION

The WHO LCG was developed to translate the 2018 WHO intrapartum care recommendations into practice, providing a framework for respectful, woman-centred care and supporting timely clinical decision-making. This study presents the first evaluation of the usability, feasibility, acceptability, and user satisfaction of the 2020 LCG in the Indonesian context. A total of 59 birth attendants, including 45 midwives and 14 doctors from four hospitals, were trained in applying the LCG. Although most participants found the training and manual applicable, only 39% felt adequately prepared to use the tool in practice. This finding aligns with previous studies that note how initial challenges in adopting new clinical tools often diminish with continued use.[1,6]

Following the training, participants applied the LCG in 120 labour cases and completed post-case evaluations, including a usability questionnaire and the System Usability Scale (SUS).[11] Overall, 40 participants (67.8%) considered the LCG suitable for clinical use, highlighting its value in systematic maternal–fetal monitoring and in guiding objective, data-driven decisions. Reported satisfaction was 71.2%, with satisfaction levels positively correlated with the number of cases managed.[12] Statistical analysis further showed significant associations between satisfaction and both length of clinical experience (Fisher's exact test, $p=0.013$) and professional cadre ($p=0.006$), suggesting the importance of role-specific support in implementation.

The main barriers in this study identified were systemic-related: staff shortages and duplicative documentation requirements, which increased workload and charting time. While design ratings for most LCG components were high (≥70%), the fetal monitoring section scored lower. Interviews indicated that reliable detection of fetal heart rate decelerations requires careful interpretation and sufficient observation time. Participants therefore recommended refresher training to standardize interpretation and support consistent practice across teams.

These findings emphasize that the LCG functions not merely as a documentation tool, but also as a catalyst for behavior change and a mechanism to ensure quality of care. It encourages real-time recording of supportive care, shared decision-making, and action planning when early warning signs are identified. For example, prompts about the presence of a labour companion encourage providers to actively facilitate this support, while mandatory action plan fields trigger timely consultation and escalation. Such features reinforce the LCG's potential to strengthen the quality of intrapartum care.[10]

In Indonesia's decentralized health system, national policies must be coupled with local ownership to be effective. Although current regulations Minister of Health Decree No. 21/2021 mandate adherence to clinical "standards" without specifically naming the partograph, this creates an opportunity for the Ministry of Health, together with the Indonesian Society of Obstetrics and Gynecology *(Perkumpulan Obstetri dan Ginekologi Indonesia, POGI)* and the Indonesian Midwives Association *(Ikatan Bidan Indonesia, IBI),* efforts are being made to update technical guidelines, professional standards, and training curricula.[13]

This mixed-methods evaluation shows that Indonesian birth attendants view the LCG positively, with acceptability and satisfaction increasing alongside clinical experience. Role-specific mentorship, refresher training, and integration of the tool within continuous quality

improvement processes, supported by strong implementation fidelity and system support, will enable the LCG to effectively operationalize WHO recommendations and improve intrapartum care for women and newborns across Indonesia. Future studies should include district hospitals and primary health facilities, where staffing and workload differ substantially.

ACKNOWLEDGEMENT

The authors acknowledge the invaluable contributions of the research team involved in this study, including the midwives, physicians, and hospital staff across all participating hospitals who supported data collection and patient care.

CONFLICT of INTEREST

The authors declare no conflict of interest, financial, or otherwise.

CONCLUSION

This study provides the first Indonesian evidence on the usability, acceptability, and satisfaction of the WHO LCG 2020 among birth attendants. The tool was perceived as more comprehensive and patient-centered than the traditional partograph, with good usability scores and overall positive feedback. Nevertheless, important challenges, including limited staffing and increased observation demands, were identified, particularly within the baby-monitoring and decision-making components. Participants also suggested the inclusion of third- and fourth-stage monitoring to strengthen its applicability further.

These findings underscore the need for phased implementation of the LCG, supported by continuous training, role-specific mentorship, adequate resources, and integration into hospital information systems. Embedding the LCG into national maternal health policies can standardise intrapartum monitoring, enhance data-driven decision-making, and promote respectful, woman-centred care. With strong system support and policy alignment, the LCG promises to improve labour care quality and contribute to Indonesia's progress toward achieving maternal health targets and the Sustainable Development Goals.

REFERENCES

1. Pingray V, Bonet M, Berrueta M, Mazzoni A, Belizán M, Keil N, et al. The development of the WHO Labour Care Guide: an international survey of maternity care providers. Reprod Health. 2021 Mar 22;18(1):66.
2. WHO recommendations: intrapartum care for a positive childbirth experience. https://www.who.int/publications/i/item/9789241550215
3. Maternal mortality ratio (per 100 000 live births). https://www.who.int/data/gho/data/indicators/indicator-details/GHO/maternal-mortality-ratio-(per-100-000-live-births)
4. Indonesia BPS. Hasil Long Form Sensus Penduduk 2020. https://www.bps.go.id/id/publication/2023/01/27/ffb5939b4393e5b1146a9b91/hasil-long-form-sensus-penduduk-2020.html
5. Madjid O A, Fongana S, Ocviyanti D, Indarti J, Adjie S, Kayika IPG, et al. Qualitative Study on Maternal and Perinatal Health Services in Primary Health Care Facility in Banten Province. Indones J Obstet Gynecol. 2023;11(2);64–9. DOI: https://doi.org/10.32771/inajog.v11i2.1892
6. Vogel JP, Comrie-Thomson L, Pingray V, Gadama L, Galadanci H, Goudar S, et al. Usability, acceptability, and feasibility of the World Health Organization Labour Care Guide: A mixed-methods, multicountry evaluation. Birth Berkeley Calif. 2021 Mar;48(1):66–75.
7. Hofmeyr G, Bernitz S, Bonet M, Bucagu M, Dao B, Downe S, et al. WHO next-generation partograph: revolutionary steps towards individualised labour care. BJOG. 2021;128(10):1658–62. doi: 10.1111/1471-0528.16694. Epub 2021 Apr 9.
8. Zelellw D, Tegegne T. The Use and Perceived Barriers of the Partograph at Public Health Institutions in East Gojjam Zone, Northwest Ethiopia. Ann Glob Health. 84(1):198–203.
9. Anantasika AAN, Putra IWA, Adnyana IBP, Megadhana IW, Mulyana RS, Hariyanto AD. Friedman Curve Positively Correlates with Cesarean Section and Oxytocin Augmentation in Active Phase Delivery as Compared to Partograph: Indones J Obstet Gynecol. 2023;11(3);143–7.
10. WHO Labour Care Guide: User's Manual. 1st ed. Geneva: World Health Organization; 2020:1
11. Sharfina Z, Santoso HB. An Indonesian adaptation of the System Usability Scale (SUS). In: 2016 International Conference on Advanced Computer Science and Information Systems (ICACSIS). 2016:145–8. https://ieeexplore.ieee.org/document/7872776
12. Mugyenyi GR, Byamugisha JK, Tumuhimbise W, Atukunda EC, Fajardo YT. Customization and acceptability of the WHO labor care guide to improve labor monitoring among health workers in Uganda. An iterative development, mixed method study. PLOS Glob Public Health. 2024;4(5):e0002780.
13. Permenkes No. 21 Tahun 2021. Database Peraturan | JDIH BPK. Available from: http://peraturan.bpk.go.id/Details/314519/permenkes-no-21-tahun-2021