

Optimizing the use of partographs by midwives in early detection of labor complications: analysis of influencing factors

Optimalisasi Pemanfaatan Partograf oleh Bidan dalam Deteksi Dini Komplikasi Persalinan: Analisis Faktor-Faktor yang Memengaruhi

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ABSTRACT

Background: The use of partographs in obstetric care is an important topic, especially in low- and middle-income countries, including Indonesia, which face high maternal and neonatal mortality rates.

Objective: This study aimed to explore and analyze factors influencing midwives' use of the partograph for early detection of labor complications.

Methods: This study employed a non-experimental quantitative approach with a cross-sectional design to analyze factors influencing partograph use by midwives. The study population was 135 midwives in Hulu Sungai Utara Regency, with a sample of 101 midwives determined using a simple random sampling technique. The dependent variable was partograph utilization, while the independent variables included midwives' knowledge, attitudes, motivation, perception of supervision, training, length of service, age, and education level. Data were collected through a structured questionnaire and observation sheet. Data analysis used the chi-square test and multiple logistic regression to identify relationships between variables influencing partograph utilization.

Results: The education was significantly associated with partograph utilization ($p=0.001$; OR 6.0), with midwives with higher education being more likely to use it. Conversely, length of service ≥ 5 years was associated with decreased partograph utilization ($p=0.000$; OR 0.05). In addition, motivation ($p=0.002$; OR 1.6) and supervision ($p=0.032$; OR 1.7) also positively influenced partograph use. The logistic regression model showed that higher education increased the probability of partograph use ($\text{Exp}(B)=11.172$), while longer work experience decreased the probability ($\text{Exp}(B)=0.028$).

Conclusion: Higher education significantly increased partograph use, while work experience above 5 years decreased its use. Motivation and supervision also positively contributed to optimal partograph use.

Keywords: early detection, labor complications, midwife, optimization, partograph

ABSTRAK

Latar Belakang: Penggunaan partograf dalam perawatan obstetrik merupakan topik penting, terutama di negara-negara berpenghasilan rendah dan menengah, termasuk Indonesia, yang menghadapi angka kematian ibu dan bayi baru lahir yang tinggi.

Tujuan: Penelitian ini bertujuan untuk mengeksplorasi dan menganalisis faktor-faktor yang memengaruhi penggunaan partograf oleh bidan untuk deteksi dini komplikasi persalinan.

Metode: Penelitian ini menggunakan pendekatan kuantitatif non-eksperimental dengan desain potong lintang untuk menganalisis faktor-faktor yang memengaruhi penggunaan

partograf oleh bidan. Populasi penelitian adalah 135 bidan di Kabupaten Hulu Sungai Utara, dengan sampel 101 bidan yang ditentukan menggunakan teknik simple random sampling. Data dikumpulkan melalui kuesioner terstruktur dan lembar observasi. Analisis data menggunakan uji chi-square dan regresi logistik berganda untuk mengidentifikasi hubungan antara variabel yang memengaruhi pemanfaatan partograf.

Hasil: Pendidikan berhubungan signifikan dengan pemanfaatan partograf ($p=0,001$; OR 6,0), dengan bidan berpendidikan tinggi lebih mungkin menggunakannya. Sebaliknya, masa kerja ≥ 5 tahun berhubungan dengan penurunan pemanfaatan partograf ($p=0,000$; OR 0,05). Selain itu, motivasi ($p=0,002$; OR 1,6) dan supervisi ($p=0,032$; OR 1,7) juga berpengaruh positif terhadap penggunaan partograf. Model regresi logistik menunjukkan bahwa pendidikan tinggi meningkatkan probabilitas penggunaan partograf ($\text{Exp}(B)=11,172$), sementara pengalaman kerja yang lebih lama menurunkan probabilitas ($\text{Exp}(B)=0,028$).

Kesimpulan: Pendidikan tinggi secara signifikan meningkatkan penggunaan partograf, sementara pengalaman kerja di atas 5 tahun menurunkan penggunaannya. Motivasi dan supervisi juga berkontribusi positif terhadap penggunaan partograf yang optimal.

Kata Kunci: bidan, deteksi dini, komplikasi persalinan, optimasi, partograf

INTRODUCTION

The utilization of the partograph has been a pivotal subject in the realm of obstetric care, especially in low and middle-income countries where maternal and neonatal morbidity and mortality rates are alarmingly high. The World Health Organization (WHO) has advocated for its use since the early 1990s, recognizing it as an essential tool for monitoring labor progression and identifying potential complications [1], [2]. The partograph provides a graphical representation that allows health care professionals to systematically record and visualize key parameters related to maternal and fetal health throughout labor. This includes tracking contractions, fetal heart rate, and maternal vital signs, which are crucial in determining the well-being of both mother and child during the critical stages of labor [3], [4].

In the context of Ethiopia, where maternal health challenges are pronounced, the partograph's implementation has been insufficiently embraced despite its outlined benefits. Evidence suggests that countries like Ethiopia face significant challenges in using this crucial tool effectively. For example, a systematic review highlighted that only about 54.92% of obstetric caregivers in Ethiopia utilized the partograph consistently [1]. This low utilization rate has dire implications, as inadequate monitoring may lead to undetected labor complications, consequently increasing the risk of maternal and infant mortality [5], [6].

Moreover, the partograph serves not only as a monitoring instrument but also as a decision-making aid during labor management. Studies have shown that the effective use of the partograph can dramatically decrease risks associated with prolonged or obstructed labor, which can lead to interventions such as cesarean sections [7], [8]. Such outcomes emphasize the necessity for midwives and other birthing attendants to be well-versed in the partograph's usage, as a lack of knowledge or confidence can significantly hinder its application [9]. This necessity for education is underscored by research indicating that hands-on training and mentoring substantially improve healthcare providers' ability to utilize the partograph effectively [10], [11].

Additionally, the disparities in partograph utilization among healthcare providers can be attributed to multiple factors, including levels of educational attainment, frequency of training, and institutional support for the tool's use [12], [13]. For example, findings from various studies revealed that midwives with higher educational qualifications were less likely to utilize the partograph compared to their diploma-holding counterparts [1]. This

counterintuitive trend may suggest a preference for more sophisticated or different labor management practices that deviate from the standardized approach advocated by WHO. Addressing these discrepancies through targeted training programs and supportive management structures is vital for improving partograph use[14].

Furthermore, barriers to effective partograph utilization extend beyond knowledge and education; they include systemic issues that affect healthcare quality in Ethiopia. These encompass shortages in healthcare personnel, inadequate logistical support, and poor availability of necessary supplies, which altogether hinder the systematic application of the partograph in clinical settings[13]. As reported in various studies, the lack of regular access to the modified WHO partograph has been a significant obstacle in its utilization, exacerbating the existing maternal health crisis in the region[15].

Although much research has focused on the use of the partograph, gaps remain in understanding the contextual factors that influence its effectiveness. Furthermore, most research focuses on the theoretical level of partograph use, while understanding the underlying motivations and actual practices in the field still requires further investigation [13], [16]. There hasn't been much previous research conducted in Indonesia, particularly South Kalimantan. Previous studies often only assessed one or two factors, lacking comprehensiveness. Little research has analyzed the work experience factor that actually reduces compliance. This research is important because proper use of the partograph can play a key role in reducing the risk of undetected complications during labor.

This study aimed to analyze factors influencing midwives' use of the partograph for early detection of labor complications. It offers novel, context-specific insights and emphasizes the importance of continuous integrated training. Using a multi-factor regression approach, the study provides updated empirical evidence to support policies on midwife development and supervision, contributing to improved training programs and better maternal and neonatal health outcomes.

METHODS

Study design

This study employed a non-experimental quantitative approach with an analytical observational cross-sectional design. This approach was chosen because it provides a better understanding of the relationships between variables, given that observations were conducted simultaneously (point-in-time approach). In the context of this study, the primary focus was on the independent variables, which included knowledge, attitudes, motivation, perceptions of supervision, training, length of service, age, and level of midwifery education. The dependent variable, defined as partograph utilization, was also examined.

A cross-sectional study design was chosen because it offers the advantage of identifying and analyzing various factors that may influence midwives' use of partographs in a simultaneous setting. This design also facilitates precise measurement of relationships between variables without requiring time delays or interventions, allowing the results to be more representative of actual conditions in the field, particularly midwifery services in Hulu Sungai Utara Regency.

Data Source and sampling procedure

The population in this study was all midwives practicing in Hulu Sungai Utara Regency, totaling 135 people. The researcher used a simple random sampling technique with the Slovin formula [$n=N/(1+Ne^2)$] to determine the sample with a 95% confidence level. Based on the Slovin formula, the number of samples obtained was 101 midwives.

Inclusion criteria includes midwives practicing in Hulu Sungai Utara Regency at the time of data collection. Registered midwives with a valid practice license. Midwives willing to participate and provide informed consent for this study. Midwives with at least

six months of experience in their profession to ensure understanding of partograph use. Meanwhile Exclusion Criteria were Midwives on leave or not actively practicing during the study period. Midwives who have not received formal training in partograph use. Those working in non-clinical settings (e.g., administration or education) without direct experience in patient care. Individuals unwilling to provide informed consent to participate in this study.

Variable of the study

The dependent variable analyzed was partograph utilization, defined as the correct and complete recording of labor monitoring results by midwives on a partograph sheet. The independent variables consisted of eight key components: (1) Midwives' knowledge of the concept, benefits, and procedures for using partographs; (2) Midwives' attitudes, reflecting their acceptance of partograph use in labor services; (3) Midwives' internal motivations, which influence partograph use; (4) Supervisors' perceptions of guidance received regarding partograph use; (5) Midwives' training experience in partograph use; (6) Length of service, which indicates the practitioner's length of service as a health worker; (7) Respondents' age, which may influence attitudes toward practice; and (8) Last formal education attained, which influences midwives' competence in their profession. Each of these variables contributes to understanding the factors that influence partograph utilization in midwifery practice.

Data Collection

Data were collected after the researcher obtained permission from the relevant agencies and implemented the necessary security procedures to maintain research ethics. Respondents were explained the purpose of the study and the procedures to be followed, and they were asked to provide written informed consent to participate. The questionnaires were completed independently by respondents under the supervision of the researcher or a research assistant to ensure the accuracy of the data obtained. Additionally, an observation sheet was used to assess the completeness of the partograph completed by the midwife previously. This data collection process aimed to provide a conducive environment for respondents to provide honest and accurate answers.

Measurement and Instruments

The instrument used in this study was a structured questionnaire specifically developed to measure the independent variables. The knowledge section consisted of 18 items assessing midwives' understanding of the partograph. Attitude was measured using 15 items covering both favorable and unfavorable statements. Motivation was assessed through 10 items reflecting individual drive, while supervision perception was measured using 10 items evaluating respondents' views on support and oversight from superiors. In addition, an observation sheet was employed to assess the completeness of previously completed partographs, providing an objective evaluation of actual utilization in practice.

The use of a structured questionnaire enabled systematic and standardized collection of quantitative data on knowledge, attitudes, motivation, supervision, training, length of service, age, and education level related to partograph use. The clearly defined items facilitated precise measurement of each construct, enhanced data consistency, and improved the overall reliability and transparency of the study findings.

This questionnaire used established psychometric principles in response to midwifery needs and practices, as highlighted by Amare and Tegegne [17], who discussed partograph utilization and related factors in the context of health care specifically for obstetric care providers. The Cronbach's Alpha result for the entire questionnaire was 0.85, indicating a strong level of internal consistency across all items.

Test reliability was assessed by administering the same questionnaire to the same group one week later, yielding a correlation coefficient of 0.78, reflecting good stability over time. This evaluation confirmed that the questionnaire was valid and reliable for data collection.

Ethical consideration

This research has received ethical approval from Sari Mulia University, Banjarmasin, with the number No.070/KEP-UNISM/I/2025

Data analysis

The research data will be analyzed using several systematic steps. The first step is bivariate analysis, which aims to examine the relationship between independent variables and partograph utilization. The chi-square test will be used to determine whether there is a significant relationship between each independent variable and the dependent variable. Next, a multivariate analysis will be conducted to identify the variables most influential on partograph utilization after controlling for other variables, using multiple logistic regression. This analysis will provide a more comprehensive picture of the factors underlying partograph utilization and ensure that the research results have strong statistical relevance.

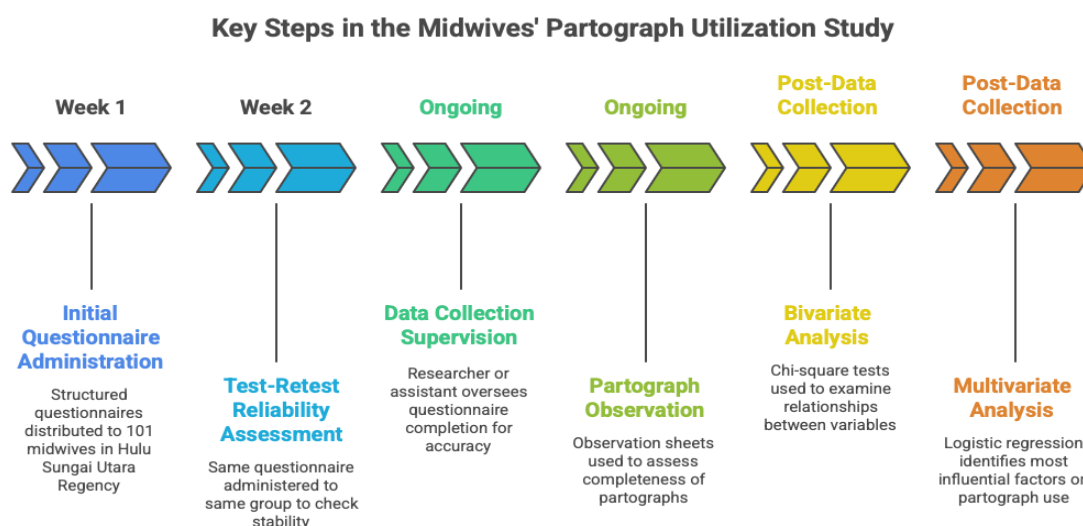


Figure 1. Research Flow

RESULTS

Table 1 shows that most respondents were ≥35 years old (60.4%), had a D3 Midwifery education (79.2%), worked in villages (79.2%), and had ≥5 years of experience (85.1%). The majority had also attended technical midwifery training (83.2%). Overall, respondents were predominantly experienced midwives with adequate education and training

Table 2 shows that partograph utilization varied across respondent characteristics. Midwives with D4/S1 education demonstrated better utilization compared to those with D3. Respondents aged ≥35 years and those with ≥5 years of experience also showed higher utilization. Additionally, respondents who had attended technical training, possessed good knowledge, and had positive attitudes tended to use the partograph more effectively. In contrast, low motivation and less optimal supervision were associated with poorer utilization. These findings indicate that education, experience, training, and individual factors play an important role in partograph use.

Table 1. Distribution of Respondent Characteristics

No.	Respondent Characteristics	Amount	
		n	%
1	Age:		
	- <35 years	40	39.6
	- ≥35 years	61	60.4
2	Education:		
	- D3 Midwifery	80	79.2
	- D4/S1 Midwifery	21	20.8
3	Workplace:		
	- Midwife in the village	80	79.2
	- Community health center midwife	21	20.8
4	Length of working:		
	- <5 years	15	14.9
	- ≥35 years	86	85.1
5	Midwifery technical training:		
	- Never	17	16.8
	- Once	84	83.2

Table 2. Utilization of partograph based on variables

Variables	Utilization of Partograph			
	Poor (score <32)		Good (score ≥32)	
	n	%	n	%
Education:				
- D3 Midwifery	60	89.6	20	58.8
- D4/S1 Midwifery	7	10.4	14	41.2
Age:				
- <35 years	22	32.8	18	52.9
- ≥35 years	45	67.2	16	47.1
Length of work:				
- <5 years	2	3.0	13	38.2
- ≥5 years	65	97.0	21	61.8
Technical Training:				
- Never	11	16.4	6	17.6
- Once	56	63.6	28	82.4
Knowledge:				
- Less (score <9)	4	6.0	2	5.9
- Good (score ≥9)	63	94.0	32	94.1
Attitude:				
- Negative (score <38)	4	6.0	2	5.9
- Positive (score ≥38)	63	94.0	32	94.1
Motivation:				
- Low (score <25)	14	20.9	0	0.0
- High (score ≥25)	53	79.1	34	100.0
Supervision:				
- Less (score <25)	8	11.9	0	0.0
- Good (score ≥25)	59	88.1	34	100.0

Table 3 shows that education ($p=0.001$; $OR=6.0$; $CI\ 2.7-7.0$) significantly increased partograph utilization, while length of service ($p=0.000$; $OR=0.05$; $CI\ 0.01-0.2$) significantly decreased it. Motivation ($p=0.002$; $OR=1.6$; $CI\ 1.4-1.9$) and supervision ($p=0.032$; $OR=1.7$; $CI\ 1.3-1.8$) also had positive significant effects. Age, technical training, knowledge, and attitude were not significant ($p>0.05$).

Table 3. Bivariate analysis of the relationship between independent variables and dependent variables

Variables	p-value	Odds Ratio (95% CI)
Education	0.001	6.0 (2.7–7.0)
Age	0.082	0.4 (0.2–1.0)
Length of Work	<0.001	0.05 (0.01–0.20)
Technical Training	0.780	0.9 (0.3–2.7)
Knowledge	0.680	1.0 (0.2–5.8)
Attitude	0.670	1.2 (0.1–5.9)
Motivation	0.002	1.6 (1.4–1.9)
Supervision	0.032	1.7 (1.3–1.8)

Table 4 (logistic regression) confirms that education significantly increased utilization (B=2.413; p=0.000; Exp(B)=11.172), meaning higher-educated midwives were 11.172 times more likely to use partographs. In contrast, ≥5 years of service reduced utilization (B=-3.591; p=0.000; Exp(B)=0.028). The model constant (B=1.723; p=0.025) indicates the model is statistically significant.

Table 4. Logistic Regression Analysis of Variables Influencing Partograph Utilization by Midwives

Independent Variables	B	SE	Wald	p-value	Exp(B) (OR)	Information
Higher education)	2.413	0.593	16.568	0.000	11.172	Significant
Length of service (≥ 5 years)	-3.591	0.843	18.122	0.000	0.028	Significant
Constant	1.723	0.767	5.053	0.025	5.604	

DISCUSSION

The utilization of partographs in obstetric care is critical for monitoring labor progress and making informed clinical decisions, as partographs serve a pivotal role in documenting labor progress and facilitating proactive interventions. A closer examination of the data reveals several key factors influencing partograph utilization, including educational attainment, age of health care providers, work experience, participation in technical training, and personal attitudes toward this essential tool.

Education, length of work, motivation, and supervision were independent variables associated with partograph utilization as the dependent variable in this study. Bivariate analysis showed that education was significantly associated with partograph utilization (p=0.001) with an odds ratio of 6.0 (CI 2.7-7.0). From the data provided, it is evident that education plays a significant role in partograph utilization. Health care professionals with a lower level of education show notably lower utilization rates compared to their counterparts with higher qualifications. Literature supports that practitioners with better educational qualifications are generally more adept at using medical tools, including partographs, due to enhanced understanding and skills acquired during their training[1], [18].

Age had a p-value (p=0.082) with an odds ratio of 0.4 (CI 0.2-1.0), which indicated that age was not related to the use of partographs by midwives. Partographs are essential tools for monitoring labor progression and identifying labor complications, consequently mitigating risks such as obstructed labor and postpartum hemorrhage, which is a leading cause of maternal morbidity and mortality [19]. Studies demonstrate that electronic partographs enhance efficiency and recognition of complications compared to traditional methods [20]. Additionally, factors such as prolonged labor substantially increase the risk of postpartum hemorrhage, underscoring the critical role of effective monitoring tools in clinical settings [21]. Thus, while age may not directly

influence partograph utilization, the adoption of these instruments remains pivotal in addressing significant obstetric complications.

The observed discrepancy in utilization rates among younger healthcare practitioners is linked to their inexperience and hesitance to adopt established methodologies. Research indicates that younger clinicians may demonstrate lower utilization of conservative treatment options due to ambivalence and uncertainty in decision-making compared to their older counterparts[22]. This suggests a gap in clinical competencies that necessitates strategic interventions. To address these deficiencies, implementing targeted mentorship and training programs tailored for younger providers can enhance their practical skills and bolster confidence in clinical decisions[23], [24]. The integration of robust mentorship initiatives has been associated with improved outcomes in skill acquisition and adherence to clinical protocols, which are vital for fostering competency in newly graduated clinicians[23], [24].

Work experience also influences partograph utilization substantially. The data reflect that those with less than five years of experience show a low utilization rate, whereas those with five years or more of experience demonstrate improved utilization. This pattern reinforces findings from multiple studies that highlight how experience is vital for gaining proficiency with clinical tools[7]. Research indicates that work experience is a critical factor influencing the utilization of the partograph among midwives and nurses. Specifically, practitioners with less than five years of experience tend to demonstrate lower utilization rates of this clinical tool. In contrast, those with five years or more of experience often exhibit improved utilization, suggesting that practical exposure enhances proficiency with clinical instruments[25], [26]. Moreover, it has been emphasized that practitioners who have opportunities for on-the-job training are often more skilled in using partographs, leading to higher rates of effective labor monitoring[27].

Length of work experience was significantly associated with partograph use ($p=0.000$) with an odds ratio of 0.05 (CI 0.01–0.2), indicating that healthcare workers with longer work experience were significantly less likely to use partographs. This finding mirrors the results of the study by Melese et al.[28], which suggests that long-term work experience can foster inefficient habits in clinical practice, such as relying on traditional methods rather than following modern protocols, such as the use of the partograph.

Technical training on partograph usage markedly influences its application. Notably, a significant percentage of those who underwent technical training utilized the partograph effectively, contrasting sharply with those who had no such training. This highlights the essential role of structured training programs in bridging the knowledge gap related to partograph usage. Studies, including work by Bajpayee et al., have indicated that training sessions lead to improved compliance and accuracy in using clinical guidelines, including the partograph[7]. Effective training not only improves knowledge but also boosts the confidence of practitioners in making clinical decisions during labor. Structured training programs have been shown to lead to improved compliance and accuracy in clinical guidelines, including partograph usage, which results in better clinical outcomes[29].

In terms of technical training and knowledge, these two variables did not show a significant relationship with partograph utilization ($p>0.05$). However, in the study by Ayehubizu et al.[30], it was found that participation in training related to the use of partographs significantly improved the knowledge and attitudes of health workers, which in turn influenced their motivation and desire to use the tool.

The data further shows that both knowledge and positive attitudes towards partograph utilization drive better outcomes. Practitioners who scored better in knowledge assessments or exhibited positive attitudes were significantly more likely to use partographs effectively. This correlates with findings from Ayehubizu, who noted that caregivers with a detailed understanding of partographs were more likely to utilize them properly than those lacking such knowledge[10]. A supportive attitude toward using clinical tools can foster an environment where care providers feel encouraged to engage with and apply their knowledge in practice. Positive attitudes towards the partograph correlate with higher utilization rates, as shown in various studies highlighting that midwives with favorable attitudes towards the tool reported increased use[31].

The attitude of health workers towards the partograph showed a p-value of 0.67, indicating no significant relationship, while motivation had a p-value of 0.002 with an odds ratio of 1.6 (CI 1.4-1.9), indicating that motivation had a significant effect on increasing partograph utilization. Previous studies confirmed that health workers who have a positive attitude towards the use of the partograph tend to be more motivated to use it effectively[6].

Motivation plays a crucial role in ensuring effective partograph usage, as indicated by significant differences in utilization rates between motivated and less motivated individuals. This finding emphasizes the importance of cultivating a motivational climate within health facilities. Additionally, supervisory support has been critically noted in influencing the capacity of care providers to utilize medical tools effectively. In a supportive environment where supervisory feedback is routine, practitioners are more likely to adopt recommended practices consistently, including the use of partographs[7,19]. Studies have shown that obstetric caregivers who receive training and continuous support demonstrate increased partograph usage, evidenced by their enhanced skills and positive attitudes towards this essential tool[33].

Supervision also had a significant relationship ($p=0.032$) with an odds ratio of 1.7 (CI 1.3-1.8), indicating that good supervision can increase the chance of partograph use. Research by Bedada et al.[7,35]. Studies show that effective, ongoing supervision is essential for supporting healthcare workers in using the partograph, especially in under-resourced settings. It enhances usage by providing training, feedback, and motivation, improving technical competence, job satisfaction, and performance. Good supervision also reduces stress and emotional exhaustion, leading to better retention and improved maternal and infant health outcomes[35], [36]. Furthermore, the positive correlation between supervision and job motivation supports the assertion that well-structured supervisory frameworks can effectively facilitate improved health services[37], [38]. The interplay between effective supervision and job satisfaction not only ensures a skilled workforce but also directly impacts the quality of maternal and newborn care, which is essential for reducing mortality rates[39].

Strength, Limitations and Implications

This study offers a comprehensive analysis of multiple variables influencing partograph utilization among midwives, demonstrating robust statistical significance in key areas such as education and motivation. Utilizing a sample size of 101 respondents provides a solid basis for the findings, which may enhance the generalizability of the results within similar contexts. Furthermore, the incorporation of logistic regression offers a nuanced understanding of the relationships between educational attainment, work experience, and partograph usage.

Despite its strengths, the study is not without limitations. The cross-sectional design restricts causal inferences regarding the relationships observed. Potential biases may

arise from self-reported data pertaining to the utilization of partographs, leading to over- or underestimation of true usage rates. Moreover, the regional focus may limit the applicability of the results to different geographical and healthcare contexts, thereby necessitating further research in diverse settings.

The practical implications of this study's findings are aimed at increasing the use of the partograph in midwifery practice and, thus, improving the quality of obstetric care. Findings indicate that higher education, sufficient work experience, motivation, and good supervision contribute to partograph utilization. Therefore, it is important to implement training strategies that emphasize the use of this tool, especially for midwives with a diploma (D3) education and less than five years of experience. Implementing evidence-based training programs and mentorship can address gaps in understanding and implementing the partograph. Furthermore, strengthening the supervision system in health institutions is essential to provide feedback and support that can foster positive attitudes and motivation among health workers. Disciplined supervision allows for skill development and increases job satisfaction, which in turn reduces the risk of complications during labor. This study emphasizes that a comprehensive approach integrating education, motivation, and support can more effectively integrate partograph use into maternity health services, contributing to reduced maternal and infant morbidity and mortality.

CONCLUSION

Several factors influence midwives' use of the partograph. Higher education significantly increases utilization, while longer work experience is associated with lower use. Technical training shows a positive but non-significant effect. Motivation and supervision both contribute positively. These findings highlight the importance of education, motivation, and supervision in improving midwifery service quality, as well as the need to strengthen education and training strategies to enhance maternal health services.

To improve practice, educational programs should emphasize the importance of partograph use to build compliance among midwives. Ongoing professional development is also needed to update skills, especially for experienced midwives. Strengthening motivation and mentoring systems can further support proper use. Future research should explore barriers among experienced midwives and identify effective solutions, while stakeholder collaboration remains essential to enhance maternal health services through optimal partograph utilization.

REFERENCES

- [1] M. Ayele *Et Al.*, "Utilization Of Partograph And Associated Factors Among Obstetric Caregivers In Ethiopia: A Systematic Review And Meta-Analysis," *Front Glob Womens Health*, vol. 6, no. 1, pp. 1–10, jan. 2025, doi: 10.3389/fgwh.2025.1339685.
- [2] A. Rahman *Et Al.*, "Feasibility And Effectiveness Of Electronic Vs. Paper Partograph On Improving Birth Outcomes: A Prospective Crossover Study Design," *Plos One*, vol. 14, no. 10, pp. 1–11, oct. 2019, doi: 10.1371/journal.pone.0222314.
- [3] H. M. Lugobe *Et Al.*, "Older Age And Higher Parity Are Associated With Nonuse Of The Partograph At Mbarara Regional Referral Hospital, Uganda," *International Journal Of Gynecology & Obstetrics*, vol. 146, no. 3, pp. 321–325, sep. 2019, doi: 10.1002/ijgo.12879.
- [4] P. Kumari, D. Soyam, V. Rawat, And A. K. Parashar, "Knowledge And Practice Regarding Plotting Of Partograph In Staff Nurses In Order To Develop And Administer A Need Based On The Job Training Program," *Pondicherry Journal Of Nursing*, vol. 15, no. 2, pp. 30–32, aug. 2022, doi: 10.5005/jp-journals-10084-13139.

- [5] A. A. Abriham, E. Shitie, S. Melese, A. M. Dessie, And A. D. Bizuneh, "Determinants Of Stillbirth Among Women Who Delivered In Hospitals Of North Wollo Zone, Northeast Ethiopia: A Case-Control Study," *Plos One*, vol. 19, no. 4, pp. 1–11, apr. 2024, doi: 10.1371/journal.pone.0301602.
- [6] Y. Haile, F. Tafese, T. D. Weldemariam, And M. H. Rad, "Partograph Utilization And Associated Factors Among Obstetric Care Providers At Public Health Facilities In Hadiya Zone, southern ethiopia," *j pregnancy*, vol. 2020, No. 4, Pp. 1–8, Apr. 2020, Doi: 10.1155/2020/3943498.
- [7] K. E. Bedada, T. K. Huluka, G. A. Bulto, And Ephremyohannesroga, "Low Utilization Of Partograph And Its Associated Factors Among Obstetric Care Providers In Governmental Health Facilities At West Shoa Zone, Central Ethiopia," *Int J Reprod Med*, vol. 2020, no. 7, pp. 1–9, jul. 2020, doi: 10.1155/2020/3738673.
- [8] W. Abadi *Et Al.*, "Magnitude Of Caesarean Section And Associated Factors Among Mothers Who Delivered In Nigist Eleni Mohammed Memorial Referral Hospital, Hossana Town, Southern Ethiopia," *Omo International Journal Of Sciences*, vol. 3, no. 1, pp. 70–83, jun. 2020, doi: 10.59122/13584d9.
- [9] R. Fikre, S. Ejeta, T. Gari, And A. Alemayhu, "Determinants Of Stillbirths Among Women Who Gave Birth At Hawassa University Comprehensive Specialized Hospital, Hawassa, Sidama, Ethiopia 2019: A Case-Control Study," *Matern Health Neonatol Perinatol*, vol. 7, no. 1, pp. 10–19, dec. 2021, doi: 10.1186/S40748-021-00128-4.
- [10] H. Türkmen And S. Yörük, "Determination Of Midwives And Nurses' Knowledge Level Who Were Given Partograph Training," *Journal Of Anatolia Nursing And Health Sciences*, Vol. 1, No. 4, Pp. 1–11, Apr. 2021, Doi: 10.17049/Ataunihem.611598.
- [11] J. N And M. Thayumanavan, "Utilization Of Partograph For Labor Management Among Healthcare Providers In Healthcare Facilities In India: A Systematic Review," *Cureus*, vol. 1, no. 8, pp. 1–11, aug. 2023, doi: 10.7759/Cureus.44242.
- [12] O. Abd-Elzاهر, M. Hassan, R. Ali, And S. Hassen, "Effect Of Educational Program About Partograph On Maternity Nurses' Knowledge At Qena University Hospital – Egypt," *Assiut Scientific Nursing Journal*, vol. 9, no. 24, pp. 1–11, mar. 2021, doi: 10.21608/asnj.2020.49953.1074.
- [13] J. Mukisa, I. Grant, J. Magala, A. S. Ssemata, P. Z. Lumala, And J. Byamugisha, "Level Of Partograph Completion And Healthcare Workers' Perspectives On Its Use In Mulago National Referral And Teaching Hospital, Kampala, Uganda," *Bmc Health Serv Res*, vol. 19, no. 1, pp. 107–115, dec. 2019, doi: 10.1186/S12913-019-3934-3.
- [14] P. Dube, "Impact Of Performance-Based Financing (Pbf) Program On Utilization And Completeness Of Partographs In Jimma," *Texila International Journal Of Academic Research*, Vol. 9, No. 3, Pp. 83–95, Jul. 2022, Doi: 10.21522/Tijar.2014.09.03.Art008.
- [15] A. G. Tilahun, D. G. Gebeyehu, Y. Y. Adinew, And F. W. Mengstu, "Utilization Of Partograph And Its Associated Factors Among Obstetric Caregivers In Public Health Institutions Of Southwest Ethiopia," *Bmc Pregnancy Childbirth*, vol. 21, no. 1, pp. 404–414, dec. 2021, doi: 10.1186/S12884-021-03822-5.
- [16] E. Mutema And M. Mhlanga, "Midwives' Knowledge, Perceptions And Practices On Utilization Of The Partograph At Mbuya Nehanda Maternity Hospital," *Frontiers (Boulder)*, vol. 4, no. 3, pp. 74–90, aug. 2024, doi: 10.11648/J.Frontiers.20240403.12.
- [17] D. A. Zelellw And T. K. Tegegne, "Level Of Partograph Utilization And Its Associated Factors Among Obstetric Caregivers At Public Health Facilities In East Gojam Zone, Northwest Ethiopia," *Plos One*, vol. 13, no. 7, pp. 1–13, jul. 2018, doi: 10.1371/journal.pone.0200479.

- [18] P. Dube, "Factors Associated With Partographs Utilization In Jimma And Bedele Zones, Oromia Regional State, Ethiopia," *Texila International Journal Of Public Health*, vol. 1, no. 12, pp. 153–165, dec. 2022, doi: 10.21522/Tijph.2013.10.04.Art015.
- [19] I. Christiana And S. Sulistyarningsih, "The Experiences Of Handling Postpartum Hemorrhage According To Various Perspectives: A Scoping Review," *Jurnal Aisyah Jurnal Ilmu Kesehatan*, vol. 8, no. 2, 2023, doi: 10.30604/jika.v8i2.2007.
- [20] D. Rozsa *Et Al.*, "The Effect Of Zhang's Guideline Vs The Who Partograph On Childbirth Experience Measured By The Childbirth Experience Questionnaire In The Labor Progression Study (Laps): A Cluster Randomized Trial," *Acta Obstet Gynecol Scand*, vol. 101, no. 2, pp. 193–199, 2021, doi: 10.1111/aogs.14298.
- [21] J. Nigussie, B. Girma, A. Molla, T. Tamir, And R. Tilahun, "Magnitude Of Postpartum Hemorrhage And Its Associated Factors In Ethiopia: Systematic Review And Meta-Analysis.," 2021, Doi: 10.21203/Rs.3.Rs-993345/V1.
- [22] A. R. Mahal *Et Al.*, "Conservative Management Of Low-Risk Prostate Cancer Among Young Versus Older Men In The United States: Trends And Outcomes From A Novel National Database," *Cancer*, vol. 125, no. 19, pp. 3338–3346, oct. 2019, doi: 10.1002/Cncr.32332.
- [23] M. L. Manirakiza *Et Al.*, "Effect Of Neonatal Nurse Mentorship In Improving Neonatal Care Competencies Among Neonatal Nurses In Rwandan Hospitals," *Public Health Challenges*, vol. 2, no. 4, pp. 1–11, dec. 2023, doi: 10.1002/puh2.141.
- [24] G. T. Feyissa, D. Balabanova, And M. Woldie, "<P>How Effective Are Mentoring Programs For Improving Health Worker Competence And Institutional Performance In Africa? A Systematic Review Of Quantitative Evidence</P>," *J Multidiscip Healthc*, vol. 12, no. 12, pp. 989–1005, dec. 2019, doi: 10.2147/jmdh.s228951.
- [25] A. P.A., O. T., And A. A.B., "Knowledge And Utilization Levels Of Partograph In Management Of Labour Amongst Midwives In Selected Health Facilities In Akure, Ondo State," *African Journal Of Health, Nursing And Midwifery*, vol. 4, no. 6, pp. 101–118, dec. 2021, doi: 10.52589/ajhnm-Fgrzbgws.
- [26] M. Gupta *Et Al.*, "Steering The Predictors To Improve The Knowledge And Utilization Of Partograph By Skilled Birth Attendants: An Intervention Study," *J Family Med Prim Care*, vol. 9, no. 6, pp. 3082–3092, 2020, doi: 10.4103/Jfmpc.Jfmpc_345_20.
- [27] D. Bajpayee *Et Al.*, "Strengthening The Use Of Partograph In High Caseload Public Health Facilities In India Through An Integrated Quality Improvement Approach," *Indian Journal Of Community Medicine*, Vol. 45, No. 4, Pp. 487–497, 2020, Doi: 10.4103/Ijcm.Ijcm_530_19.
- [28] K. G. Melese, B. G. Weji, T. M. Berheto, And E. T. Bekru, "Utilization Of Partograph During Labour: A Case Of Wolaita Zone, Southern Ethiopia," *Heliyon*, vol. 6, no. 12, pp. 1–11, dec. 2020, doi: 10.1016/j.heliyon.2020.e05633.
- [29] R. Singh, M. Agarwal, S. Sinha, H. H. Sinha, And M. Anant, "Modified Who Partograph In Labour Room: A Quality Improvement Initiative To Find Out Concerns, Challenges And Solutions," *Cureus*, vol. 1, no. 10, pp. 1–11, oct. 2022, doi: 10.7759/cureus.30851.
- [30] L. M. Ayehubizu, A. T. Tibebeu, M. T. Fetene, S. H. Yohannes, And Z. S. Yadita, "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*, vol. 17, no. 3, pp. 1–11, mar. 2022, doi: 10.1371/Journal.Pone.0264373.
- [31] B. T. Negash And Y. Alelgn, "Proper Partograph Utilization Among Skilled Birth Attendants In Hawassa City Public Health Facilities, Sidama Region, Ethiopia, In 2021," *Bmc Womens Health*, vol. 22, no. 1, pp. 539–549, dec. 2022, doi: 10.1186/S12905-022-02117-X.

- [32] S. W. Gebrehiwot, M. W. Abrha, And H. G. Weldearegay, "Health Care Professionals' Adherence To Partograph Use In Ethiopia: Analysis Of 2016 National Emergency Obstetric And Newborn Care Survey," *Bmc Pregnancy Childbirth*, vol. 20, no. 1, pp. 647–657, dec. 2020, doi: 10.1186/s12884-020-03344-6.
- [33] A. A. Ayenew And B. F. Zewdu, "Partograph Utilization As A Decision-Making Tool And Associated Factors Among Obstetric Care Providers In Ethiopia: A Systematic Review And Meta-Analysis," *Syst Rev*, vol. 9, no. 1, pp. 251–262, dec. 2020, doi: 10.1186/S13643-020-01505-4.
- [34] M. Markos, A. Arba, And K. Paulos, "Partograph Utilization And Associated Factors Among Obstetric Care Providers Working In Public Health Facilities Of Wolaita Zone, 2017," *J Pregnancy*, vol. 2020, no. 7, pp. 1–8, jul. 2020, doi: 10.1155/2020/3631808.
- [35] A. P. Kare, A. B. Gujo, And N. Y. Yote, "Job Satisfaction Level And Associated Factors Among Rural Health Extension Workers Of Sidama Region, Southern Ethiopia," *Health Serv Res Manag Epidemiol*, vol. 8, no. 1, pp. 1–12, jan. 2021, doi: 10.1177/23333928211051832.
- [36] E. Janíková And R. Bužgová, "Satisfaction With Supervision Of Healthcare Workers In Relation To Job Satisfaction And Selected Characteristics Of Supervision," *Central European Journal Of Nursing And Midwifery*, vol. 12, no. 4, pp. 487–494, dec. 2021, doi: 10.15452/cejnm.2021.12.0004.
- [37] A. O. Adefolarin, A. Gershim, A. O. Sola, And G. Oye, "The Effect Of Training And Supervision On Primary Health Care Workers' Competence To Deliver Maternal Depression Inclusive Health Education In Ibadan, Nigeria: A Quasi-Experimental Study," *Bmc Health Serv Res*, vol. 21, no. 1, pp. 1286–1295, dec. 2021, doi: 10.1186/s12913-021-07208-3.
- [38] S. Poudel, H. P. Kaphle, S. Parajuli, And A. Poudel, "Work Motivation And Job Satisfaction Among Local Government Health Workers In Chitwan, Nepal: A Cross-Sectional Study," *bmj public health*, vol. 3, no. 1, pp. 1–12, feb. 2025, doi: 10.1136/bmjph-2024-001736.
- [39] T. M. Nyamhanga, G. Frumence, And A.-K. Hurtig, "Facilitators And Barriers To Effective Supervision Of Maternal And Newborn Care: A Qualitative Study From Shinyanga Region, Tanzania," *Glob Health Action*, vol. 14, no. 1, pp. 1–11, jan. 2021, doi: 10.1080/16549716.2021.1927330.