

Determinants of Village Midwife Performance in Maternal and Child Health Services: a Cross-Sectional Study in Jambi Province, Indonesia

ABSTRACT

Aims: The study aimed to analyze the determinants of village midwife performance in maternal and child health services.

Materials and Methods: This quantitative study employed a cross-sectional design. The population consisted of all village midwives in Muaro Jambi Regency, Jambi Province, with a sample of 171 midwives providing maternal and child health services. This study was conducted over a period of three months, from January to March 2024, with the data collection phase occurring between February and March 2024. A total of 171 village midwives from Muaro Jambi District, Jambi Province, participated. The inclusion criteria required participants to have more than two years of experience as village midwives. The dependent variable was the performance of the midwives in improving maternal and child health, while the independent variables were supervision, training, and attitude.

Findings: Additionally, 101 midwives (59.8%) had never attended training, while 139 (81.3%) had received training, and 119 midwives (69.9%) exhibited a predominantly positive attitude. The significant variables associated with the performance of village midwives in the univariate analysis are age (p-value = 0.000), education level (p-value = 0.000), length of service (p-value = 0.000), incentives outside salary (p-value = 0.000), and supervision within the past year (p-value = 0.001). In the multivariate analysis, the significant variables are age (p-value = 0.035) and education level (p-value = 0.037).

Conclusion: Considering the age and education level of midwives in the implementation and socialization of the MCH program is crucial for enhancing the performance of village midwives.

Key words: Attitude, Community Health Workers, Midwifery, Training Support, Maternal Death, Child Health

INTRODUCTION

The goal of the maternal health care quality assurance system is to reduce the maternal mortality ratio (MMR) to fewer than 70 per 100,000 live births in order to attain Universal Health Coverage (UHC) by 2030. In Tanzania, among the 556 maternal deaths, 71.8% were attributed to a lack of knowledge and skills among health workers.(1) Numerous studies have shown that high-quality care can prevent two-thirds of maternal and newborn deaths, potentially saving 4.3 million lives annually (2,3)

In 2020, low- and lower-middle-income nations accounted for about 95% of all maternal deaths, the majority of which were avoidable. Regions and sub-regions of the Sustainable Development Goals (SDGs) are used here. Approximately 87% (253 000) of the anticipated global maternal fatalities in 2020 occurred in Sub-Saharan Africa and Southern Asia. The two regions with the largest overall reductions in maternal mortality ratios (MMRs) between 2000 and 2020 were Eastern Europe (from an MMR of 38 to 11) and Southern Asia (from an MMR of 408 to 134). Even though its MMR in 2020 was quite high, sub-Saharan Africa also saw a significant 33% decrease in MMR between 2000 and 2020. Over this time, the MMRs of four SDG sub-regions were approximately halved: The MMR decreased by almost one-third in Eastern Africa, Central Asia, Eastern Asia, Northern Africa, and Western Europe (4).

In Indonesian, the maternal mortality rate in Indonesia is 305 per 100,000 births, primarily caused by eclampsia, bleeding, and infections, with 78% of these deaths occurring in healthcare facilities. The predetermined target is to reduce this rate to 183 per 100,000 births by 2024, and the 2030 Sustainable Development Goals (SDGs) aim for a reduction to 70 per 100,000 live births. Comparing current achievements to these targets, it is evident that the program's realization requires targeted interventions and policy adjustments to enhance health human resources (5). Determinants of maternal mortality include direct causes such as obstetric complications like bleeding, eclampsia, and infection. Intermediate causes encompass reproductive health status, access to healthcare, and health-related behaviors. Indirect causes involve factors like education and employment status (6).

Midwives play a critical role in addressing public health challenges, requiring them to possess the competence to deliver safe, high-quality, and efficient health services throughout the lifespan (7).

A qualitative study in Nigeria demonstrated efforts to reduce maternal mortality by integrating midwives as community-based providers within the healthcare system. This integration aimed to enhance the quality of maternal and newborn care through active community involvement (8). A study in Bangladesh identified a women-centered midwifery model of care that enhances continuity of care. However, challenges include limited community accessibility, insufficient prioritization of care standards, and inadequate community involvement and integration of healthcare systems to fully promote the benefits of midwifery care (9). The demand for midwifery competence is expected to enhance the quality of maternal health services in the community. Studies in Pakistan have shown that community midwife programs can improve women's access to safe pregnancy and delivery services through effective communication and outreach (10). Another study in India found that midwives played a key role in shifting the perspectives and cultural attitudes of remote communities regarding effective healthcare systems (11–15).

This study is considered important because it provides in-depth insights into the factors affecting the performance of village midwives. By understanding these determinants, policies and programs can be designed to enhance the capacity of midwives in delivering maternal and child health services. This could lower death rates and enhance general health by raising the standard of care given to expectant mothers and their unborn children. The findings of this study can serve as a basis for creating health policies that are more successful. The data obtained allows policymakers to identify areas that require special attention, whether in terms of training, resources, or infrastructure support. This will aid in the more efficient and targeted allocation of resources.

This research has aimed to analyze Determinants of Village Midwife Performance In Maternal And Child Health Services: A Cross-Sectional Study In Jambi Province, Indonesia

METHODS

This cross-sectional descriptive study was carried out in Indonesia's Jambi Province's Muaro Jambi District. This research has been carried out for two months starting from February to March 2024, utilizing the OpenEpi sample size calculator and calculating the 7.5% performance prevalence of village midwives (16), population size of 333, 95% confidence level, and 5% error margin. The estimated sample size was 180. However, 9 samples were removed due to a considerable amount of missing information. Therefore, 171 samples data were finally included in the study. A total of 171 village midwives from Muaro Jambi District, Jambi Province, participated in the study. Inclusion criteria required participants to be village midwives with more than two years of experience. Exclusion criteria included retired midwives and those unwilling to participate. Participants were selected based on data from the Muaro Jambi District Health Office and village mapping. In villages with two midwives, one was chosen according to the inclusion criteria.

The study utilized a performance instrument for village midwives in the Maternal and Child Health program provided by the Indonesian Ministry of Health. The questionnaire on the performance of village midwives was adapted from the research by Yunita et al. and consisted of 10 questions. Responses were scored as either 1 for 'completed' or 0 for 'not completed.' The performance of the village midwives was categorized into two objective criteria: good (if the respondent's score was equal to 6) and poor (if the score was less than 6). The questionnaire has been validated, as all question items were deemed valid with a calculated r-value greater than 0.3. Reliability was also confirmed, with a Cronbach's alpha value exceeding 0.6, indicating high consistency. For assessing supervision, training, and attitudes, questionnaires were adapted from previous research. The supervision variable was assessed using a questionnaire consisting of 5 indicator questions. Two objective criteria were used to evaluate supervision: 'ever' (if the respondent's score was equal to 4) and 'never' (if the score was less than 4). The training variable was measured using a similar 5-question questionnaire, applying a Guttman scale with scores of 0 and 1. The same criteria—'ever' (score = 4) and 'never' (score < 4)—were applied to the training variable. For the attitude variable, a 7-question questionnaire was used, also employing a Guttman scale with scores of 0 and 1. Attitudes were classified as either 'positive' (if the respondent's score was equal to 5) or 'negative' (if the score was less than 5).

This study was conducted in February - March 2024 at Muaro Jambi Regency, Jambi Province and 2 Staff of muaro jambi district health office, trained previously using the instrument were

enlisted. Before All respondents received a thorough explanation of the goals and procedures involved in data collection.

Version 20.0 of the Statistical Package for Social Sciences (SPSS) was used for data entry and analysis. For categorical variables including age, education level, marital status, length of service, use of official vehicles, training, rewards, supervision, and attitudes, frequency and percentages were calculated. To determine the relationship between village midwifery and its general features, inferential statistics were investigated using the Chi-square test. Statistical significance was defined as a p-value of less than 0.05. Additionally, binary logistic regression was used to find possible variables that could affect village midwifery performance.

Prior to data collection, all participants signed an informed consent form, and the research ethics committee of Universitas Jambi, Indonesia, granted permission to perform this study (Number: 572/UN21.8/PT.01.04/2024).

RESULTS

Table 1. Distribution of Variable to Performance of Village Midwife

Characteristics	n (%)
Age	
20-30	36 (21.1)
31-40	97 (56.7)
>=41	38 (22.2)
Marital Status	
Married	160 (93.6)
Unmarried	11 (6.4)
Educational Level	
Bachelor of Midwifery	67 (39.2)
Diploma in Midwifery	104 (60.8)
Working Duration	
1-10 years	67 (39.2)
>=11 years	104 (60.8)
Official vehicle	
Available	59 (34.5)
Not Available	112 (65.5)
Incentives outside salary	
Yes	59 (34.5)
No	112 (65.5)
Midwifery Clinical Training	
Ever	68 (40.2)
Never	101 (59.8)
Supervision in 1 year	
Ever	139 (81.3)
Never	32 (18.7)
Attitude	
Good	119 (69.6)
Not Good	52 (30.4)

Table 1 shows the demographics of the midwives participated in the study. The majority were aged 31-40 years (97 midwives, 56.7%), married (160 midwives, 93.6%), and held a Diploma 3 in midwifery (104 midwives, 60.8%). Most had been working for 11 years or more (104 midwives, 60.8%), did not use government vehicles (112 midwives, 65.5%), and did not receive compensation (112 midwives, 65.5%). Additionally, 101 midwives (59.8%) had never attended training, while 139 (81.3%) had received training, and 119 midwives (69.9%) exhibited a predominantly positive attitude.

Table 2. Factors Associated with the Performance of Village Midwives in MCH Services

Variables	Performance		p-value
	Good	Poor	
Age			0.013*
20-30	9 (25)	27 (75)	
31-40	55 (56.7)	42 (43.5)	
>=41	9 (90)	1 (10)	
Education			0.014*
Bachelor of Midwifery	50 (74.6)	17 (25.4)	
Diploma in Midwifery	46 (44.2)	58 (55.8)	
Working Duration			0.168
1-10 years	22 (32.8)	45 (67.2)	
>=11 years	74 (71.2)	30 (28.8)	
Supervision in 1 year			0.046*
Ever	85 (61.2)	54 (38.8)	
Never	11 (34.4)	21 (65.6)	

*Binary logistic regression ≤ 0.05

Table 2 shows that the statistically significant variables are age, education, length of employment, and supervision within the past year.

Table 3. Binary Logistic Regression Analysis for Predicting Performance of Village Midwife

	Univariable analysis		Multivariable analysis	
	COR (95% CI)	p-value	aOR (95% CI)	p-value
Age				
20-30	1.00 (ref)		1.00 (ref)	
31-40	27.000 (2.993-243.531)	0.075	14.609 (1.213-175.925)	0.035*
>=41	6.873 (0.838-56.386)	0.564	4.142 (0.126-135.688)	0.425
Marital Status				
Married	1.00 (ref)		1.00 (ref)	
Unmarried	4.577 (2.394-8.749)	0.000*	1.160 (0.246-5.464)	0.851
Educational Level				
Bachelor of Midwifery	1.00 (ref)		1.00 (ref)	
Diploma in Midwifery	3.708 (1.893-7.267)	0.000*	0.426 (0.191-0.949)	0.037*
Working Duration				
1-10 Years	1.00 (ref)		1.00 (ref)	
>=11 Years	0.345 (0.218-0.545)	0.000*	0.306 (0.006-16.807)	0.563
Official Vehicle				
Available	1.00 (ref)		1.00 (ref)	
Unavailable	1.219 (0.644-2.310)	0.543	0.814 (0.363-1.825)	0.617
Incentives				
Yes	1.00 (ref)		1.00 (ref)	
No	0.341 (0.178-0.655)	0.001*	1.951 (0.873-4.357)	0.103
Midwifery Training				
Yes	1.00 (ref)		1.00 (ref)	
No	0.801 (0.431-1.487)	0.481	1.062 (0.488-2.310)	0.880
Supervision in 1 year				

Ever	1.00 (ref)			1.00 (ref)		
Never	3.005 16.723)	(1.343-	0.007*	0.380 1.020)	(0.142-	0.055
Attitude						
Good	1.00 (ref)			1.00 (ref)		
Not Good	0.648 1.265)	(0.332-	0.204	1.208 2.765)	(0.527-	0.655

COR: Crude odds ratio, aOR: Adjusted odds ratio, CI: confidence interval, *p-value ≤ 0.05

Table 3 reports the logistic regression analysis results. Significant variables in the univariate analysis include age, education level, length of service, incentives outside salary, and supervision within the past year. In the multivariate analysis, the significant variables were age and education level.

DISCUSSION

Based on the study's findings, there is no observed relationship between supervision and the performance improvement of village midwives. Various factors contribute to midwife performance. Research conducted at Puskesmas Pidie, Aceh, reveals that organizational factors significantly impact midwife performance, particularly compensation. Midwives who receive adequate compensation tend to perform better than those with insufficient compensation. Factors such as experience, demographics, motivation, satisfaction, and compensation levels greatly influence performance. Specifically, poor performance is likely in 99.8% of cases where experience, demographics, motivation, satisfaction, and compensation are lacking. Conversely, when midwives benefit from substantial experience, favorable demographics, strong motivation, high satisfaction, and good compensation, the likelihood of achieving good performance increases to 4.8% (17).

The results of this study reveal that the majority of village midwives have not participated in midwifery clinical training. Despite evidence indicating that such training can enhance midwives' performance by improving their knowledge and practical skills to meet established standards, many have yet to benefit from it. To achieve meaningful improvements in midwifery practice, it is essential to provide ongoing training, strengthen capacity, and secure robust community support (18). Research conducted by the Australia Indonesia Partnership for Maternal and Neonatal Health (AIPMNH) in Nusa Tenggara Timur revealed a low level of knowledge and skills among coordinator midwives (Bikor) prior to training. Notably, their skill levels did not significantly differ from those of junior midwives even 2-3 years post-training. Factors such as education and recent childbirth experience were found to influence the skill levels of Bikor. To address these gaps, it is crucial to enhance skills through Clinical Instruction (CI) training and regular clinical practice. While consistent practice can lead to skill improvement over the first 6 months, it is important to note that skills may decline after 2 years without ongoing training and support (19).

Research conducted in Tanah Datar District identifies several variables associated with midwife performance: length of service, supervision by coordinating midwives, motivation, and job satisfaction (20). The suboptimal performance of midwifery services in South Aceh Regency can be attributed to insufficient guidance from the Health Office, as well as low levels of knowledge and motivation among midwives (21). Research in Bangli Regency demonstrates a significant relationship between the performance of village midwives and factors such as competence, financial compensation, and supervision. Among these variables, supervision has the most substantial impact, influencing midwife performance 25 times more than the other factors Putri et al.'s research (22) in Semarang revealed that facilitative supervision lacked formal preparation, consisting only of an assignment letter and a checklist. Both Bikor and PMB had not received specialized training or socialization related to facilitative supervision. Instead, Bikor was provided solely with a checklist by the Health Office as an assessment guideline, without a reference book for facilitative supervision. Additionally, orientation on the checklist for PMB was not conducted for all Bikors. Consequently, critical components of facilitative supervision, such as self-assessment by PMB and verification by Bikor in collaboration with PMB, were not implemented. As a result, follow-up supervision was solely based on Bikors' assessments. Supervision often took the form of unscheduled inspections without prior agreement on the implementation schedule with PMB, occurring during working hours at the Public Health Center.

To enhance the performance and professionalism of midwives, mentoring relationships are

crucial for developing professional confidence. These relationships should be structured with clear duration and agreements. Mentors are responsible for listening, challenging, supporting, and guiding their mentees, fostering research, exploration, and reflective practice. While the mentored midwife retains responsibility for her practice and obligations, senior midwives or mentors play a key role in guiding less experienced colleagues to improve performance, service quality, and address areas of poor performance. Performance supervision can be conducted through supportive, statutory, and professional supervision methods (23).

Research conducted in Belgium examined the relationship between advanced midwifery practitioners' task performance and their competencies across various domains. The study found that certain tasks, such as research and clinical expertise, were performed inadequately. This underperformance was attributed to factors related to work organization, competency deficiencies, and insufficient leadership (24). Research in Ethiopia found that autocratic leadership was the most common style among midwifery leaders and had a negative effect on midwives' performance. Democratic and laissez-faire leadership styles were associated with improved performance (25). Research in Sudan indicates that supervision of midwives can significantly enhance service quality. It also aids in developing robust supervision systems, increases active engagement within the community, and strengthens the relationships between health facilities and midwives. Additionally, effective supervision can boost public trust in midwives (26–29).

Study Limitation

The strict inclusion criteria may limit the generalizability of the study's findings. For instance, only midwives with more than two years of experience were included, potentially excluding insights into the performance of newer midwives or those with differing professional backgrounds. Additionally, participant selection based on Health Office data and village mapping could introduce bias if the data is incomplete or inaccurate, which may affect the overall representativeness of the sample.

Strength and Recommendation

This research is highly relevant to the local context of Muaro Jambi, offering valuable insights for policy development and improved planning of public health programs in the region. The study also provides recommendations for fostering partnerships between the government, educational institutions, and health organizations to support training and professional development initiatives for village midwives.

CONCLUSION

Age and education level are key determinants of village midwives' performance in maternal and child health services