

Factors Related to Midwives' Performance in Implementing the Electronic Cohort Maternal and Child Health at Koto Tengah Public Health Centers, Padang 2023

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ABSTRACT

The Maternal Mortality Rate (MMR) is still at 305 per 100,000 live births. The Ministry of Health has made a breakthrough to accelerate the reduction of MMR, one of which is by launching the Elektronik-Cohort Maternal and Child Health (E-Cohort MCH) application which includes the implementation of application-based recording, monitoring, and reporting of Maternal and Child Health (MCH) services. Midwives play an important role to analyze these data to identify health risks, evaluate development, and early warning of the condition of mothers and children. The purpose of the study was to determine the factors associated with the performance of midwives in implementing the MCH E-Cohort.

Keywords: The elektronik-Cohort MCH, Midwives Performance, Public Health Center

INTRODUCTION

Data of the 2015 National Population Survey (SUPAS) show that Indonesia's maternal mortality ratio (MMR) is still at 305 per 100,000 live births. This figure is still far from the target of 70 per 100,000 live births by 2030. Maternal mortality is influenced by various factors that underlie the onset of maternal and neonatal risks, such as maternal illness, nutritional problems, the 4 Too factor (too young and

too old to become pregnant and give birth, too close a distance between pregnancy and childbirth, and too many pregnancies and childbirths), as well as aggravated by the delay in addressing emergency cases/complications due to the 3 Late conditions (late decision making, late access to appropriate health facilities, and late seeking services from competent personnel (1).

The government has made various efforts to reduce the maternal mortality rate (MMR) through health development policies, especially increasing the number, network and quality of health facilities such as health centers, accompanied by an increase in the quality and quantity of health workers. The Maternal and Child Health (MCH) program is one of the tasks of Puskesmas. Midwives are among the health workers who have an important position in reducing MMR and act as the spearhead of maternal and child health activities in the field, especially in antenatal care (ANC) services (2).

Midwives are required to record and report when providing services. Midwives document the results of their services in maternal cards (medical records), MCH books, MCH registers, maternal cohorts, and paper-based MCH reports. However,

there were several barriers to manual recording, including manual cohort recording in the field. Based on Hosizah's research (2021), documenting the outcomes of ANC services with paper (paper-based) results in data redundancy. This situation leads to delays in data collection, making the data incomplete, untimely, irrelevant, and inaccurate, resulting in late pregnancy risk screening (3).

From the above description, it can be concluded that the use of manual cohorts in Puskesmas makes the recording of health services for pregnant women suboptimal. Therefore, there is a need for a system that will facilitate the officers in documenting the service data. To overcome this effort, the Directorate of Family Health (Kesga) of the Ministry of Health of the Republic of Indonesia has developed a digital and integrated recording and reporting system, namely *Elektronik Kohort maternal and child* (the E-Cohort MCH) (4).

This application is a system that serves to conduct integrated monitoring for mothers, infants, and young children, which includes the implementation of recording, monitoring, and reporting of maternal and child health services based on information technology. The MCH E-Cohort is very important because it contains complete information on the patient's basic data, records of the results of the examinations carried out and the health services provided from the mother's pregnancy to the child's fifth birthday (5).

The implementation of the E-Cohort MCH is one of the ways in which midwives record the services they provide in accordance with the Midwifery Care Standards. Successful implementation of the MCH E-Cohort is supported by reliable human resources (HR) to achieve optimal performance (2).

Gibson (2017) states that there are 3 factors that influence performance. The first factor is individual factors, such as a person's abilities, skills, family background, work experience, social and demographic levels. The second is psychological factors, such as perception, role, personality, motivation,

and job satisfaction. The third factor is organizational factors, such as organizational structure, job design, leadership, and reward system (6).

In the implementation of the E-Cohort MCH, it is closely related to performance and is a key factor in achieving the goals of improving maternal and child health monitoring and care. With good performance, midwives can play a role in accurate data collection, appropriate analysis and effective decision making to improve the quality of maternal and child health care.

The purpose of this study was to determine the factors associated with midwives' performance in implementing the E-Cohort MCH at Koto Tengah public Health Center's, Padang City.

LITERATURE REVIEW

Performance comes from the word performance, which means work output or work results, and can refer to more than just the results of a person's work. It can also refer to the way work is done. Performance is the result of work that is strongly linked to the strategic goals of the organization, customer satisfaction, and economic growth (7).

Midwives have a duty to provide holistic health services. The health services provided by midwives are an integral part of the health care system itself. Providing quality services requires skills in all areas, including a clear recording and reporting system with data accuracy (8).

The E-Cohort MCH is a maternal and child cohort application in digital form. This application is a dedicated digital platform to support health workers, program managers, and decision makers at the health facility, district/city, provincial, and national levels to improve the responsiveness of family health services and the management of maternal and child health data and information according to minimum service standards (4).

The E-Cohort MCH is a dedicated digital platform that supports health workers,

program managers, and decision makers at the health facility, district/city, provincial, and national levels to improve the responsiveness of family health services and manage maternal, newborn, and child health data and information according to minimum service standards. A system that functions to conduct integrated maternal, newborn, and child surveillance, which includes the implementation of information technology-based recording, monitoring, and reporting of maternal, newborn, and child health services.

The e-cohort MCH is very important because it contains complete information on the patient's basic data, records of tests performed, and health services provided from the mother's pregnancy to the child's fifth birthday (9).

The purpose of the E-Cohort MCH is to facilitate the completion, management, and response, accessible anytime, anywhere, such as reports, dashboards, and notifications in real time and on time. The E-Cohort MCH also improves the effectiveness of MCH data collection and reporting. MCH cohort data can be accessed on computers or mobile phones wherever health workers are. Data can be searched more quickly. The E-Cohort MCH application also provides a dashboard that can help health workers monitor MCH service indicators. In other words, the E-Cohort MCH can improve health workers' response time to danger signs in pregnant women, infants and young children to prevent emergencies and even deaths (9).]

MATERIALS & METHODS

This research is a quantitative study with observational analytical type and uses cross sectional design. This research was conducted in the health centers in Koto Tengah sub-district, namely 5 health centers consisting of the Lubuk Buaya Health Center, the Ikur Koto Health Center, the Anak Air Health Center, the Air Dingin Health Center and the Dadok Tunggul Hitam Health Center. A total of 68 midwives were surveyed using the E-Kohort

MCH. Independent variables in this study included age, knowledge, motivation, leadership, facilities, and workload. The dependent variable in this study was the performance of midwives in implementing the E-Cohort MCH.

Data Collection Technique

Data were collected through questionnaires and observation. This research was approved by the Ethics Committee of the Faculty of Medicine, Universitas Andalas.

STATISTICAL ANALYSIS

Univariate analysis was performed on each variable from the study results. Bivariate analysis was performed using the chi-squared test with a confidence interval (CI) of 95% and $\alpha = 0.05$. If the p-value is ≤ 0.05 , H_0 is rejected, meaning that there is a significant relationship between the independent variable and the dependent variable. The results of a multivariate analysis can be evaluated by the exposure value or odds ratio. The higher the odds ratio value, the greater the influence on the dependent variable being analyzed. Data were analyzed with SPSS

RESULT

The results of the respondent characteristic can be seen as follows (Table 1)

Table 1. Responden Characteristic

No	Respondent Characteristics	f (n=68)	%
1	Educational		
	associate degree of midwifery	57	83,3
	bachelor of midwifery	9	13,2
2	Work Period		
	1-10 years	23	33,8
	11-20 years	30	44,1
	21-30 years	8	11,8
3	Employment level		
	Civil Servant	55	80,9
	Honorary employee (/volunteer)	13	19,1
	Total	68	100

Based on table 1 above, it can be seen that the educational characteristics of midwife education respondents at the Koto Tengah Public Health Center's, most of the respondents have a associate degree of midwifery (83.3%), bachelor of Midwifery

education (13.2%) and master of Midwifery education (2.9%), had a length of service of 1-10 years (33.8%), a range of 11-20 years (44.1%), a working period of 21-30 years

(11.8%) and a working period of 31-40 years (10.3%), employment status as civil servants (PNS) (80.9%) and non-civil servants (19.1%)

Table 2 Univariate Analysis

Age of Respondent	f	%
Old ≥ 35 years old	47	69,1 %
Young < 35 years old	21	30,9 %
Total	68	100
Respondent Knowledge	f	%
Less	13	19,1
Good	55	80,8
Total	68	100
Respondent Motivation	f	%
Less	15	22,1
Good	53	77,9
Total	68	100
Leadership	f	%
Less	35	51,5
Good	33	48,5
Total	68	100
Workload	f	%
Less	35	51,5
Good	33	48,5
Total	68	100
Facilities	f	%
Incomplete	39	57,4
Complete	29	42,6
Total	68	100
Performance	f	%
Less	36	52,9
Good	32	47,1
Total	68	100

Based table 2 above it can be seen that most of the research respondents were at an old age ≥ 35 years (69.1%), had good knowledge (80.8%), had good motivation (77.9%), had poor leadership (51.5%), had a

poor workload (51.5%), had incomplete work facilities (57.4%) had poor performance on the implementation of the E-Cohort MCH (52.9 4%).

Table 3. Bivariate Analysis

	Under performance		Good Performance		Total		P Value
	f	%	f	%	f	%	
Age							
Old ≥ 35 years	27	57,4	20	42,6	47	100	0,395
Young < 35 years	9	42,9	12	57,1	21	100	
Total	37	54,4	31	45,6	68	100	
Respondent Knowledge							
Less	12	84,6	2	15,4	13	100	0,025
Good	25	45,5	30	54,5	55	100	
Total	36	52,9	32	47,1	68	100	
Respondent Motivation							
Less	14	93,3	1	6,7	15	100	0,001
Good	22	41,5	31	58,5	53	100	
Total	36	52,9	32	47,1	68	100	
Leadership							
Less	25	71,4	10	28,6	35	100	0,004
Good	11	33,3	22	66,7	33	100	
Total	36	52,9	32	47,1	68	100	
Workload							
Less	26	74,3	9	25,7	35	100	0,001
Good	10	30,3	23	69,7	33	100	
Total	36	52,9	32	47,1	68	100	
Facilities							
Incomplete	25	65,8	13	34,2	38	100	0,032
Complete	11	36,7	19	63,3	30	100	
Total	36	52,9	32	47,1	68	100	

Table 3 above shows that there is a relationship between knowledge, motivation, leadership, workload and facilities on the performance of midwives in implementing the E-Cohort MCH, workload, and facilities on midwives' performance in implementing the E-Cohort MCH ($p < 0.05$), but there is no relationship between age and midwives' performance in implementing the MCH E-Cohort. in the implementation of the E-Cohort MCH. Based on the bivariate test, the variables of knowledge, motivation, leadership, workload, facilities have a p -value < 0.25 and can be further analyzed.

Table. 4 Multivariate Analysis

Variable	Coefficient (β)	Wald	p -value
Motivation	12,86	4,905	0.027
Leadership	4,38	5,342	0.021
Workload	6,88	9,057	0.003

From the results of the study, it was found that the motivation variable had the largest Coefficient β value of 12.86 with a p -value of 0.027, which means that good motivation has a good the opportunity of 12.86 times more in the implementation of the e-cohort MCH in the Koto Tangah Public Health Center's in Padang City 2023.

DISCUSSION

Based on the results of the study, age did not affect the performance of midwives in implementing the e-cohort MCH because it was influenced by other factors such as workload, motivation, and supervision. The coordinating midwife and the midwife in charge of MCH at the puskesmas were senior midwives aged ≥ 35 years. They were charged with the task of being in charge of the MCH program, including the e-Cohort MCH program, so they had to be able to complete each of their responsibilities, including the e-Cohort MCH reporting. Therefore, they may have higher commitment and motivation in implementing MCH E-Cohort. According to Amalia et al (2021), midwives' performance is directly influenced by age, income, workload, motivation and perceived

financial compensation. Midwives' performance is indirectly influenced by education, employment, social support, and marital status. (10).

Research by Lasut et al (2017) also states that there is no significant difference in employee performance based on age, with a significance value of 0.156. (11). Research by Nissa et al (2019) also states that there is no significant relationship between age and midwife performance in ANC services. Older midwives have more experience, so they are more dexterous and skilled, which also results in good performance. (12) Based on the results of the study, knowledge has a p -value 0,025, which means that there is a relationship between knowledge and midwives' performance in implementing the e-cohort MCH. Knowledge can influence midwives' performance in implementing the E-cohort MCH. Knowledge can be supported by formal education, regular training, and up-to-date data sources such as scientific journals and practice guides. Midwives need to increase their knowledge through the development of midwifery science. According to Mardiah in Tatogo (2021), there is a relationship between knowledge and midwife performance in K4 coverage with a p -value of 0.01. That the knowledge of midwives is related to the performance of midwives in K4 visits because if the midwife has good knowledge, the midwife can provide good service to patients so that patients feel satisfied with the services provided by midwives and patients will make repeat visits, this motivates midwives to improve their performance. (13).

In Lasut's study (2018) on the relationship between knowledge and midwife performance in the implementation of ANC 10T service standards, knowledge was associated with midwife performance with a p -value of 0.001. (14). Based on the results of the study, motivation has a p -value 0.01, which means that there is a relationship between motivation and midwives' performance in implementing the E-Cohort MCH. Motivation can influence the

effectiveness and efficiency of implementing the E-Cohort MCH program. With high motivation, midwives will increase their productivity and work efficiency in collecting and monitoring E-Cohort MCH data. The results of the research by Nasir et al. (2017) obtained a p-value 0.034, there is an effect of motivation on the performance of village midwives in improving ANC services in Halmahera Regency Health Center. (15). In line with the study of Linda et al. (2019), there is a relationship between motivation and performance of midwives in RSUD with a p-value of 0.001. Work motivation is one of the factors that influence the performance of a person or their environment, with the degree of influence depending on the intensity of motivation. Midwives who have good motivation will be able to achieve the goals set by the Maternal and Child Health Program, so with high motivation their performance will increase. (16). Based on the results of the study, leadership has a p-value 0.004, so it can be concluded that there is a significant relationship between leadership and midwives' performance in implementing the E-Cohort MCH. This shows that most of the midwives showed poor perception of leadership because they rarely monitored, evaluated and provided feedback in the implementation of E-Cohort MCH.

The findings of Pamundhi et al. (2018) stated that there was a relationship between leadership and performance of midwives in postpartum services in Salatiga City with a p-value of 0.000. Leadership is the core of management, which is the driving force of human resources. Leadership will influence members to achieve group goals. The personality of a superior leader who has different characteristics from his members will be the basis of leadership effectiveness. (17). The results of Purwanto et al. (2020) research show that transformational leadership and organizational climate have a positive and significant effect on the performance of public health centers employees, both directly and indirectly

through the mediation of innovative work behavior. Innovative work behavior has a positive and significant effect on employee performance both directly and through innovative work behavior as a mediator. This means that the more positive the supervisor's leadership practices and organizational climate, the more conducive innovative work behavior will be and the better the performance of the company's employees will be. (18).

Based on the results of the study, workload has a p-value 0.001, so it can be concluded that there is a significant relationship between workload and midwife performance in the implementation of E-Cohort MCH. The lack of interoperability between the E-Cohort MCH reporting systems leads to duplication of the data entry process, making it inefficient, time consuming and increasing the workload for midwives, with many midwives complaining of double data entry. Research by Nisa et al. (2019) shows that respondents with good perceptions of workload also tend to have good performance, while respondents with unfavorable perceptions also tend to have poor performance. The results of this study indicate a value of $P = 0.012$, which means that there is a relationship between workload and midwife performance in antenatal care. (12). Ruwayda's research (2016) in Jambi City also states that there is a relationship between workload and implementation of ANC service standards by midwives with a p-value of 0.020. Midwives who have a high workload have concurrent responsibilities in addition to their duties and functions as implementers of ANC services in the health center. (19) The results of the study found that the dominant variable and most related to the performance of midwives in the implementation of e-cohort MCH is the motivation variable with the Coefficient β value of 12.86 with a p-value of 0.027, which means that good motivation has a good performance opportunity of 12.86 times more in the implementation of e-cohort MCH at Koto

Tengah Health Center's, Padang City in 2023. Based on the results of the study, the institution has a p-value 0.032, so it can be concluded that there is a significant relationship between the institution and the performance of midwives in the implementation of the E-Cohort MCH. Work motivation is a person's drive to do his or her job. If it has a strong impetus from within or without, it will drive someone to perform better.

CONCLUSION

There is a relationship between knowledge, motivation, leadership, workload and facilities with the performance of midwives in the implementation of the MCH E-Cohort at the Koto Tangah Padang Sub-district Health Center. The most dominant variable associated with the performance of midwives in implementing the E-Cohort MCH at the Koto Tangah Padang public Health Centers is motivation.

Declaration by Authors

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