

MULTILEVEL ANALYSIS OF FACTORS ASSOCIATED WITH PERFORMANCE OF MIDWIVES IN INTEGRATED ANTENATAL CARE SERVICE IN PATI, CENTRAL JAVA

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ABSTRACT

Background: In 2017, nearly 295,000 women died during and after pregnancy and childbirth. In low-resource situations, the vast majority of maternal death (94%) occurred, and most could have been avoided. This study aimed to analyze the factors associated with the performance of midwives in integrated antenatal care service in Pati, Central Java.

Subjects and Method: This was a cross-sectional study carried out at 26 integrated health posts (posbindu) in Pati, Central Java. A sample of 130 midwives randomly was selected for this study. The dependent variable was work performance of midwives. The independent variables at level 1 were age, employment status, workload, working time, leadership perception, and healthcare facility. The independent variable at level 2 was posbindu. The data were collected using questionnaire. The data were analyzed by a multilevel linear regression.

Results: Work performance of midwives increased with working time (OR= 0.19; 95% CI= 0.04 to 0.33; p= 0.012) and healthcare facility (OR= 0.26; 95% CI= -0.77 to 1.31; p = 0.610). Work performance of midwives decreased with age (b= -0.07; 95% CI= -0.05 to 0.13; p= 0.100), employment status (b= -0.87; 95% CI= -1.89 to 0.15; p= 0.096), workload (b= -0.22; 95% CI= -0.45 to 0.01; p= 0.058), leadership perception (b= -0.002 ; 95% CI= -0.08 to 0.07; p= 0.949). Posbindu had strong contextual effect on work performance of midwives with ICC= 8.60%.

Conclusion: Work performance of midwives increases with working time and decreases with employment status and workload. The work performance associated with age, healthcare facility, and leadership perception, but it is statistically non significant. Posbindu has strong contextual effect on integrated antenatal care (ANC) performance of midwives.

Keywords: performance of midwives, contextual effect, antenatal care

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BACKGROUND

Development in the health sector is an important part of improving Human Resources' quality (HR). Maternal and child health problems are national problems that need to be given top priority in solving them because they indicate a nation's health status. Health development is increasing awareness and living healthy for everyone to realize the highest public health status.

One indicator of the high degree of health of a nation is the Maternal Mortality Rate coverage (MMR). The high MMR in Indonesia has made the government place efforts to reduce MMR as a priority health development program. In the Indonesian Health Demographic Survey, Indonesia's maternal mortality rate in 2014 was 126 per 100,000 live births.

The target of Millennium Development Goals in 2015 was 102/ 100,000 live births.

This was a problem, of course, in the health sector, so that some questions arise as to why this goal had not been achieved (Risksda, 2014).

The Maternal Mortality Rate (MMR) in Central Java Province in 2013 was 118 per 100,000 live births. In 2014, it was 126 per 100,000 live births, and in 2015 was 111 per 100,000 live births. In Pati District, maternal mortality in 2013 was 167 per 100,000 live births. In 2014, it was 95 per 100,000 live births, and in 2015 was 117 per 100,000 live births. The largest cause of maternal death in Pati district was pre-eclampsia, followed by bleeding (Pati District Health Office, 2016).

One of the efforts to reduce maternal mortality is the Antenatal Care (ANC) service. According to Pusdiknakes (2003) cited by Endang (2011), midwifery services by health center midwives, one of which is antenatal examinations. These pregnancy examinations are carried out to check the mother and fetus's condition regularly, followed by correcting any deviations.

The main objective of antenatal care is to facilitate healthy and positive outcomes for both mother and baby by developing a trusting relationship with the mother, detecting life-threatening complications, preparing for birth, and providing education. Antenatal care is important to ensure natural processes continue to run normally during pregnancy.

In terms of quantity of data, the ANC's coverage in Pati district in 2015 was close to the target. It showed that pregnant women already had their first pregnancy check-up (K-1) (100%) and K-4 visits with a frequency of at least 4 times during their pregnancy (96.03%). Pati district health workers' coverage of deliveries was 98.29% (Pati District Health Office, 2016).

The Pati District Health Office had made various efforts to improve the performance of midwives, including through in-

creasing the education level of village midwives to Diploma III Midwifery, training on Maternal Perinatal Audit, IUD insertion training, training in Normal Childbirth Care, as well as Obstetric Management and Obstetrics Basic Neonatal (Dinkes SBD, 2015). However, these efforts had not resulted in the good performance of midwives. In terms of quantity, the coverage of K-1 and K-4 in the Pati district had met the targets, namely 100% and 98%. The high maternal mortality rate in Pati Regency was related to midwives' performance problems in providing services that were considered not optimal (Pati District Health Office, 2016).

Performance is the output produced by the functions or indicators of a job within a certain time. Performance is a function of competence, attitude, and action. If employees' competence, attitudes, and actions towards their work are high, it can be predicted that their behavior will work hard to achieve organizational goals (Gibson, 2001).

According to Gibson, three variables affect behavior and performance, namely individual variables (ability and expertise, background and demographics), psychological variables (perceptions, attitudes, learning, and motivation), and organizational variables (resources, leadership, rewards, structure, design, work). The three groups of variables influence work behavior, which in turn affect personal performance. Performance-related behavior is related to work tasks that must be completed to achieve a position or task (Gibson, 2001).

Based on the above, the researcher was interested in researching the analysis of factors associated with midwives' performance in services ANC in Pati Regency so that problems in pregnancy can be detected early through appropriate ANC activities.

SUBJECTS AND METHOD

1. Study Design

This was a cross-sectional study carried out at 26 integrated health posts (posbindu) in Pati, Central Java.

2. Population and Sample

A sample of 130 midwives randomly was selected for this study. The dependent variable was the work performance of midwives.

3. Study Variables

RESULTS

A. Univariate Analysis

Table 1. Sample Characteristics (categorical data)

Variables	Frequency Distribution	
	N	%
Age		
26 - 35 years	18	69%
36 - 45 years	5	19%
> 45 years	3	12%
Employment Status		
Employee daily freelance	8	31%
Non-Permanent Employees (PTT)	8	31%
Civil Servants (PNS)	10	38%
Workload		
Light	18	69%
Heavy	8	31%
Employment Period		
New	16	62%
Old	10	38%
Perception against Leadership		
Less Good	15	58%
Good	11	42%
Health facilities		
Outpatient	13	50%
Inpatient	13	50%
performance Midwives		
Less Good	56	43%
Good	74	57%

B. Bivariate Analysis

Table 2 showed bivariate analysis was conducted to describe one independent variable's effect on one dependent variable using Pearson with $p = 0.050$.

The independent variables at level 1 were age, employment status, workload, working time, leadership perception, and healthcare facility. The independent variable at level 2 was posbindu.

4. Data Analysis

The data were collected using a questionnaire. The data were analyzed by a multilevel linear regression.

C. Multivariate Analysis of Linear Regression

Table 3 showed the linear regression analysis age factor, status staffing, workload, work period, the efficacy of self, self-actualization, perception on leadership, and motivation to performance midwives.

Table 2. Relationship age, emloyment status, workload, working period, perceptions of leadership and performance of midwives (N = 130)

Independent variables	r	p
Age	0.11	0.194
Employment Status	0.38	0.001
Workload	-0.85	0.001
Working Period	0.46	0.001
Perceptions of Leadership	0.45	0.001
Health Facilities	0.20	0.018

Table 3. Linear regression analysis age factor, status staffing, workload, work period, the efficacy of self, self-actualization, perception on leadership, and motivation to performance midwives

Independent variables	coef	95 % CI		p
		Lower Limit	Upper Limit	
Age (years)	-0.70	-0.15	0.13	0.102
Work status (permanent)	-0.87	-1.89	0.15	0.096
Work status (temporary)	-1.75	-3.53	0.02	0.053
Workload	-0.22	-0.45	0.01	0.058
Work Period (years)	0.19	0.04	0.33	0.012
Perception on Leadership	0.002	-0.08	0.07	0.949
Health Facilities	0.26	-0.77	1.31	0.612
Var (constan)	26.14	12.21	40.06	
Intraclass Correlation	8.6%			
Likelihood Ratio Test p = - 257.950				

Table 3 showed ICC = 8%, which meant that the midwife group had a contextual influence on the variation in midwives' performance by 8.6%. This figure was greater than the standard rule of thumb 5-8%, so the midwife's contextual influence from the multilevel analysis was indeed important to note. The likelihood ratio = - 257.95 means a statistically significant difference between the models without taking into account the contextual effect and the model that considers the contextual effect. In this case, the condition of the midwife influenced the performance appraisal of the midwife.

DISCUSSION

Effect of age on midwives' performance

The results showed that younger midwives were more likely to have better performance

than midwives who were more mature. This showed that the age of the midwife was not significant to performance. According to Hasibuan (2003), this was argued that individual age affects physical, mental, workability, responsibility and tends to be absent.

Conversely, older individuals had a less physical conditions but worked resiliently and had greater responsibility for the work done. So they were likely to have better performance. This condition was also not in accordance with the opinion of Gordon (1993) in Saefulloh (2012), which explained that the older a person is, the higher the desire to prove his/ her existence in his workplace.

This study results were different from the research results conducted by Rudianti (2011) on nurse performance. The results of Rudianti's research (2011) showed that The 7th International Conference on Public Health Solo, Indonesia, November 18-19, 2020 |144 <https://doi.org/10.26911/the7thicph-FP.01.10>

nurses who are <32 years old had less performance (53.4%), which was greater than the nurses who are ≥32 years old (33.7%). It was very influential on performance in nursing practice, where the older the nurse's age when receiving a job, it will be more responsible and experienced. The age that increases will also increase the wisdom of one's ability to make decisions, reason, control emotions, and tolerate others' views to affect their performance improvement.

The other studies showed that young people had the potential to have a good performance. This is due to their physical condition. They are still able to carry out all activities. Besides, young people are more productive and have more energy. They tend to have high aspirations and expectations compared to older people who are more established and less enthusiastic about achieving expectations. This was according to Ilyas (2002) quoted by Syaifulloh (2012) that age has an indirect effect on performance. At a young age, individuals usually want to achieve and seek as much experience as possible. This is possible to be a performance driver. Even though he is still young, it does not prevent him from having a good performance.

The effect of employment status on midwife performance

The results showed a negative influence on employment status on midwives' performance, and it was statistically significant ($p=0.050$). Midwives with temporary employment status were more likely to have a better performance than midwives who have a civil servant or permanent employment status.

Another study related to employment status was studied by Muhammad Saefulloh (2012) with the title of the effect of employment status on nurses' performance in the inpatient room. It showed no significant difference between the performance of civil

servants and non-civil servants in the inpatient room of the Indramayu District Hospital in 2012. This was different from the research results by researchers that stated that employment status had an adverse effect on midwives' performance.

According to Saefulloh (2012), the civil servant is one of the Government's state apparatus to provide services to the community. T

he state guarantees civil servants' lives in terms of the fulfillment of a decent life for human life, including clothing, food, and shelter for all members of the nuclear family. State guarantees for civil servants also cover further education in increasing competence that can support their performance. With this guarantee, it is hoped that civil servants can serve the community according to predetermined standards. Civil servants are public servants, so they are demanded to provide the best service to the community as consumers. This is the case with midwives, one of the customers is a patient, so nurses should provide the best service according to the Ministry of Health's practice standards.

Although the rights received between PNS and non-PNS nurses are not the same, this does not prevent non-PNS nurses from providing the best performance for patients in providing services. Midwives who have non-permanent employment statuses, such as temporary employees and casual daily employees, hope to improve their employment status to perform well. They may make the basis for the leadership to clarify their employment status. In contrast, for those who are already civil servants, there is an assumption that they have got clarity against recognized employment status. In terms of performance, it is better for midwives who do not have clear employment status.

Effect of workload on performance of midwives

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The results showed a negative influence between workload and performance of midwives, and it was statistically significant. Midwives who had a low workload in carrying out their duties and responsibilities for services were more likely to have better performance than midwives who had a heavy workload (coef= -0.22; 95% CI = -0.45 to 0.01; p = 0.053).

According to Lang et al. (2004) in Carayon 2008, heavy/ high nursing workloads can affect patient safety, which meant that the higher the nurses' workload, the lower the patient safety is. This was in accordance with this study results that the higher the midwife's workload, the lower the performance shown.

It is undesirable from the impact of a high workload. If the workload received is too large, it will cause work stress, affecting work motivation and decreased performance (Hombergh et al., 2009 in Mudayana, 2012). According to Gurses, 2008 (in Mudayana, 2012), the workload can affect employee work stress.

Besides, it can also affect service to patients and patient safety, so that midwives' performance is low. The dual duties performed by midwives indicate the high workload of midwives. For example, apart from being the implementer of ANC integrated services and other midwifery services, midwives at the health center have additional responsibilities, such as being a village midwife or an administrative officer.

The high workload every day but good performance can impact the midwife in the future because the human immune system will not always last. There will certainly be a decrease in endurance. Workload too much will cause various effects that fatigue both physical and mental and emotional reactions such as headaches, digestive disorders, neg-

lect, forget and irritable so potentially harmful to workers (Manuaba, 2000).

Effect of work period on the performance of midwives

The results showed a positive influence between tenure on midwives' performance, and it was statistically significant. Midwives who had a long working period carrying out their service duties and responsibilities were more likely to have better performance than midwives who had a new tenure (coef = 0.19; 95% CI = 0.45 to 0.33; p = 0.012).

This was in accordance with the results of research conducted by Surani (2008). There was a significant relationship between tenure and village midwives' performance implementing Basic Health Services in Kendal Regency.

The working period can be related to experience. The longer the working period of a person, the more skilled they are at doing their job. This supports Gibson's theory which stated that one factor that can affect individual performance is experience. If there are more individual experiences, the higher the performance will be. In this study, it could be seen that the proportion of service life <9 years with good performance was smaller than the midwives at the health center who had a service period of ≥10 years with good performance.

The effect of perceptions on leadership on the performance of midwives.

The results showed a negative influence between perceptions of democratic leadership at work on midwives' performance, and it was not statistically significant. Midwives who had good leadership perceptions in carrying out their duties and responsibilities for services were more likely to have less performance than midwives who had poor leadership perceptions (coef = -0.002; 95% CI = -0.08 to 0.07; p = 0.949).

This research was not in accordance with the results of Harmiati (2016) research with the results of the relationship between leadership and performance with a significance value of 0.001. One of the factors that influence a person's performance is leadership. Leadership is the art or process of influencing others. They are willing to be on their own and enthusiastically work towards achieving organizational goals. If the subordinate's perception of the superior's leadership is not good, it will reduce their enthusiasm at work to reduce employee performance.

According to Hagen and Waif (1961) cited by Nursalam (2002), leadership is the ability to influence the behavior of others to achieve group assignments or group goals and at the same time maintain group unity. The group leader's role is a) Internal liaison, b) Informer, c) Decision maker, and d) Innovator/ change.

Reksohadiprodjo (1996) stated that organizations' different leadership styles would affect individual participation and group behavior. Midwives perceive leadership style as a stimulus that can influence performance. It is hoped that the midwife will have the perception of democratic leadership at the head of the puskesmas. However, leadership that is less transparent and does not involve midwives in making ANC services can reduce performance.

Researchers assumed that in carrying out the Puskesmas Midwives' activities in Puskesmas, Pati district, it needs optimal attention and support from the leaders of the puskesmas. Puskesmas leaders as leaders must have the ability to develop strategies that can assist midwives in carrying out puskesmas activities, namely providing midwifery care.

The effect of health facilities on midwife performance

The results showed a positive influence between health facilities on midwives' performance, and it was not statistically significant. Midwives working in more complete health facilities were more likely to have better performance than midwives working in less complete health facilities (coef = 0.26; 95% CI = -0.77 to 1.31; p = 0.612).

Although health care facilities affected performance, the results were not significant. Using both inpatient and outpatient health service facilities did not affect the ANC service. Health service facility is a tool and/or place used to carry out health service efforts, whether promotive, preventive, curative, or rehabilitative, carried out by the Government, regional governments, and/ or the community.

According to the Ministry of Health of the Republic of Indonesia (2001), there are two types of health centers, namely nursing health centers (inpatient) and non-nursing health centers (outpatient/ non-inpatient). Inpatient health centers are defined as puskesmas equipped with additional rooms and facilities to save emergency patients, and the measures given are limited operative measures and temporary inpatient care (Efendi, 2009). Hospitalization of patients is carried out for at least 24 hours of treatment.

The facilities and infrastructure between inpatient and outpatient health centers only laid in the availability of more complete laboratories from the research. Inpatient health centers had laboratory facilities for HIV-AIDS and HBsAg testing. Outpatient health facilities that did not have laboratory facilities can still carry out an integrated ANC service process by making referrals to patients to more complete health facilities.

The nursing health center (inpatient) functions as a referral center for emergency
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patients before being taken to the hospital. Limited operative measures are contained, such as traffic accidents, labor with complications, and other emerging diseases in nature. As the first level inpatient health centers, nursing health centers provide health services including observation, diagnosis, treatment, and medical rehabilitation by staying in the inpatient room of the puskesmas (Kepmenkes, 2008).

Non-nursing Puskesmas only provides outpatient health services. According to Permenkes No. 029/2010 stated, outpatient health services activities include observation, diagnosis, treatment, and/ or other health services without being hospitalized.

The effect of the midwife and patient groups on the performance of the midwife

The results showed a significant value of the midwife group on the variation in midwives' performance in ANC by 8.6% (ICC = 8.6%; likelihood ratio = - 257.95; $p = 0.001$). It was important to note this contextual condition of the midwife, as shown from the multilevel analysis.

Many variable factors can influence the variation in the midwife's performance who is assessed by the patient. Gibson (2008) stated that the factors that affect performance are individual variable factors consisting of abilities and skills, background, and demographics. The second factor influencing performance is the psychological variable which consists of perception, attitude, personality, motivation, job satisfaction, and job stress. At the same time, the third factor that affects performance is organizational factors consisting of leadership, compensation, conflict, power, organizational structure, job design, corporate design, and career.

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