Supervision of Midwife Coordinator to Antenatal Care Service Quality with Work Motivation as an Intervening Variable

Siti Aminah
Community Health Centre Pagiyanten Tegal Regency, Master of Management Program STIE Bank BPD Jateng Semarang Indonesia siti4mienah@gmail.com

Grace T. Solovida
Master of Management & Accounting Departement Program STIE Bank BPD Jateng Semarang, Indonesia tianna3186@gmail.com

Abstract—Tegal Mortality Rate (AKI) of Tegal Regency in 2016 is 112 per 100,000 live births and in 2017 is 52.7 per 100,000 live births, antenatal service is a service provided to pregnant women by health workers to maintain pregnancy which is done according to standard of antenatal service defined in the standard of midwifery services including ANC conducted with midwife supervision coordinator and work motivation. The purpose of this study obtained empirical evidence regarding the influence of supervision of midwife coordinator to the quality of antenatal care service with work motivation as intervening variable at midwife in Pagiyanten District Health Center of Tegal Regency. Population of this research is midwife who work and have a commission in Pagiyanten health center area which amounted to 48 people, research sample is using total sampling technique in all study population. Data collection using questionnaires, data analysis techniques using multiple linear regression and path analysis. The result of the research shows that the supervision of midwife coordinator has an influence on the quality of ANC service on the midwife, the supervision of the midwife coordinator has a positive effect on the work motivation on the midwife, the work motivation has a significant influence on the quality of ANC service on the midwife. Conclusion there is significant positive effect Supervision of midwife coordinator to quality of antenatal care service with motivation as intervening variable at midwife in Pagiyanten District Health Center of Tegal Regency. Suggestion for the stakeholders of maternal and child health policy, that in order to create the quality of ANC service, it must apply the supervision of the midwife coordinator regularly and scheduled and improve the supervisory quality of the coordinator midwife.

Keywords—midwife supervision coordinator; antenatal care quality service; work motivation

I. INTRODUCTION

Based on the maternal health program, a pregnant woman should receive antenatal care according to standards at least four times (K4), with the recommended distribution of services being at least once in the first trimester, one second trimester and two times in the third trimester of pregnancy [1].

The full service coverage of pregnant women (K4) in Central Java in 2016 amounted to 93.71%, an increase compared to 2015 (92.04%) but still below the target of Minimum Assessment Standard (SPM) of 2025 (95%) (Java Provincial Health Office Tengah, 2016). K4 coverage in Tegal Regency in 2016 was still below the 95% target of only 87.73% and in 2017 it reached 91.99% increasing compared to 2016 [2].

Compliance with midwives implements midwifery service standards for maternal and child health impacting and having leverage on the quality of antenatal care provided, which in turn contributes to the reduction in morbidity and mortality rates in mothers and infants. There is enough evidence to show that the quality of health services at the community level is still low, such as studies conducted in Indonesia by D’Ambruoso, et al., which stated that midwifery services provided by midwives were still below service standards [3]. Prual Research, et al. in Nigeria mentions the quality of examination of risk factors during antenatal consultation has effectiveness in preventing and predicting obstetric complications [4]. Supported by the study of Mathole, et al. in Zimbabwe states that the first antenatal visit can detect pregnancy complications [5].

The low performance of midwives can be caused by several things, including the motivation of midwives themselves. Previous research stated that, motivation is closely related to the performance of midwives in ANC services based on Midwifery Service Standards [6]. Motivation can be used as a strategy to improve the performance of Community health centre employees, because the effectiveness of employee performance depends on his motivation [7].

Herzberg's theory concludes that achievement, recognition, work itself, responsibility, progress, growth, supervision, relationships with supervisors and co-workers will influence a person's motivation in carrying out work. In the quality of the ANC service, the activity in giving recognition of achievements, responsibilities and others is part of the activities of the manager / leader in the form of direction [8].

By looking at the importance of the influence of the supervision of the coordinating midwife on the quality of
antenatal care services with motivation as an intervening variable for midwives in the Pagiyanten Community Health Center, Tegal Regency, the objectives of this study are:

- Empirically examining the influence of the supervision of the coordinating midwife on the quality of antenatal care services to midwives in the Pagiyanten Community Health Center in Tegal Regency.
- Empirically examining the influence of the supervision of the coordinating midwife on the work motivation of midwives in the Pagiyanten Community Health Center in Tegal Regency.
- Empirically testing the effect of work motivation on the quality of antenatal care services for midwives in the Pagiyanten Community Health Center in Tegal Regency.
- Empirically testing work motivation as an intervening variable influences the supervision of coordinating midwives on the quality of antenatal care services in the Pagiyanten Community Health Center in Tegal Regency.

**II. METHOD**

**A. Research Model**

This research model can be described as follows:

![Fig. 1. Research model.](image)

Figure 2 describes a research model that tries to analyze influence the supervision of the coordinating midwife on the quality of ANC services with work motivation as an intervening variable.

**B. Hypothesis**

Subekti examined that knowledge, motivation, supervision and rewards are related to performance [9]. Sulistyaningsih also argues that the most influential supervision is supervision with the performance of village midwives in Pati Regency [10]. The sub variables of supervision in this study, measured by indicators of supervision carried out by KIA coordinator midwives in the community health center area of the village midwife covering the regularity of supervision implementation, indicators in supervision implementation (completeness of facilities and infrastructure & completeness of recording and reporting), results of supervision have been submitted to midwife’s village. This is also supported by research by Kurniawati, that the performance of village midwives is influenced by organizational factors, namely supervision by coordinating midwives in Banyumas District [11]. Based on this, the research hypothesis can be formulated as follows:

**H1:** Supervision of the coordinator midwife has a positive effect on the quality of antenatal care services

Work motivation will make employees' commitment to the organization will be higher. If employees have a good commitment in the company then encourage the achievement of organizational goals, because it is supported by loyal or loyal employees in carrying out their work, actively participate in the involvement of every job so that employee performance is also expected to increase. Employees who have a high commitment can carry out the tasks assigned to them and run them and refer their business responsibly.

This is consistent with the results of previous studies conducted by Wardani [12], Liana [13] and Putri [14] who found that supervision affects employee motivation, with high supervision resulting in better work motivation. Based on this, the research hypothesis can be formulated as follows:

**H2:** Supervision of the coordinator midwife has a positive effect on work motivation

Hasibuan in Prabu which states that humans are social beings who desire. This desire occurs continuously and will only stop when the end of his life arrives [15]. A need that has been satisfied is not a motivator for the perpetrator, only unmet needs will be a motivator. Motivation questions how to direct the power and potential of subordinates to be willing to work together productively, succeed in achieving and achieving the goals that have been determined. The importance of motivation because motivation is the thing that causes, channels and supports human behavior, so that they want to work hard and enthusiastically achieve optimal results. This is in accordance with the results of previous research conducted by Koesmono [16], Ayu and Suprayetno [17] and Murti [18] who found that motivation has a significant effect on employee performance, the higher or positive motivation of employee work, the higher the employee’s performance. Based on this, the research hypothesis can be formulated as follows:

**H3:** Work motivation has a positive effect on the quality of antenatal care services

The results of this study are in line with Nurbaeti which states that there are differences in compliance with implementing standards between officers who get well-revised and officers who are not properly supervised [19]. This is also relevant to the results of Guspianto's study that supervision and motivation relate to the compliance of village midwives towards antenatal care service standards [20]. Based on this, the research hypothesis can be formulated as follows:

**H4:** Work motivation as an intervening variable influences the supervision of the coordinating midwife on the quality of antenatal care services.

**C. Research Method**

The population of this study were midwives who worked and were domiciled in the Pagiyanten community health center, totaling 48 people. The sampling technique used is total
sampling, that is, the total population is sampled [21]. The sample that will be taken in this study are all midwives in the Pagiyanten health center, totaling 48 people, so the sample is taken by census as many as 48 people. The community health center, totaling 48 people, was used to find out the effect of the independent variable on the dependent variable used by multiple linear regression analysis. The multiple linear regression equation that becomes the analysis model is as follows:

\[ Y = \beta_0 + \beta_1X + \beta_2M + \epsilon \]

**Explanation:**
- \( Y \) = Antenatal care service quality
- \( \beta_0 \) = Konstanta
- \( \beta_{1,3} \) = Regression Koefficien for i th variable
- \( \epsilon \) = Standar Error
- \( X \) = Supervision
- \( M \) = Work Motivation

This study in testing the hypothesis using path analysis method. Path Analysis is a method to measure the validity of a theory regarding a causal relationship between three or more variables that can be studied using a correlation research design. While according to Ridwan the path analysis model is used to analyze the pattern of relationships between variables in order to determine the direct or indirect effects of a set of independent (exogenous) variables on the dependent variable (endogenous) [21].

The sobel analysis is used to determine the effect of mediator variables, namely work motivation. The mediation hypothesis testing can be done by a procedure developed by Sobel [22] and known as the Sobel Test (Sobel Test). This Sobel test is done by testing the strength of the indirect influence of the independent variable (X) on the dependent variable (Y) through the intervening variable (M). \( Y \) (b) or \( ab \rightarrow M \) (a) with the path \( M \rightarrow \) The indirect effect of \( X \) to \( M \) through \( Y \) is calculated by multiplying the path \( X \ Y \) (b) or \( ab \rightarrow M \) (a) with the path \( M \rightarrow \)

**III. RESULTS AND DISCUSSION**

Research on 48 respondents showed that based on known age the youngest age was 29 years, the oldest was 53 years with an average age of 40 years. This means that respondents are productive. A person's actions are caused by the maturation process where the more age or adult one will be more adapted to the environment so that it can consider the advantages or disadvantages of the action, according to data obtained from the field that the midwife's preeclampsia management process is good.

Respondents with Diploma education were 28 people (58.3%) and those with Diploma / S1 education were 20 people (41.67%). Education can affect a person, including behavior towards lifestyle in motivating to be ready to participate in health changes. The midwife education is at least Diploma so that the respondent already has skills that help the process of maternal admission and examination (ANC).

Respondents who have a working period of 1-5 years are 8 people (16.7%), work period of 6-10 years is 14 respondents (31.25%), and respondents with a working period of 11-15 years have 13 respondents (27.08) and the service period > 15 years there are 12 people (25%). This means that the majority of respondents in the productive period who already have a work period of more than 5 years, the longer the service period of the midwife has an impact on the role of the midwife. The longer the working period, the better the ability because it has adjusted to the job.

| No | Pearson Correlation (R calculate) | R Table | Result |
|----|---------------------------------|---------|--------|
| X1 | 0.522                           | 0.284   | Valid  |
| X1-2 | 0.518                           | 0.284   | Valid  |
| X1-3 | 0.842                           | 0.284   | Valid  |
| X1-4 | 0.799                           | 0.284   | Valid  |
| X1-5 | 0.718                           | 0.284   | Valid  |
| X1-6 | 0.683                           | 0.284   | Valid  |

Based on table 1, the results of the study showed that the smallest calculated r value is 0.518 and the largest calculated r is 0.842 after comparison with r table 0.284 then all items of the item question r calculate > r table, this means all items are valid.

**A. Work Motivation**

The work motivation variable consists of 12 questions, while the validity test results are as follows:

**TABLE II. VALIDITY TEST FOR WORK MOTIVATION**

| No | Pearson Correlation (R calculate) | R Table | Result |
|----|---------------------------------|---------|--------|
| M-1 | 0.664                           | 0.284   | Valid  |
| M-2 | 0.829                           | 0.284   | Valid  |
| M-3 | 0.703                           | 0.284   | Valid  |
| M-4 | 0.837                           | 0.284   | Valid  |
| M-5 | 0.714                           | 0.284   | Valid  |
| M-6 | 0.694                           | 0.284   | Valid  |
| M-7 | 0.630                           | 0.284   | Valid  |
| M-8 | 0.604                           | 0.284   | Valid  |
| M-9 | 0.746                           | 0.284   | Valid  |
| M-10 | 0.742                           | 0.284   | Valid  |
| M-11 | 0.804                           | 0.284   | Valid  |
| M-12 | 0.530                           | 0.284   | Valid  |

Based on table 2, the results of the study showed that the smallest calculated r value is 0.530 and the largest calculated r is 0.837, after comparison with r table 0.284 then all items of the item question r calculate > r table, this means all items are valid.

**B. ANC Service Quality**

The ANC service quality variable consists of 30 questions, while the validity test results are as follows:
he Cronbach Alpha value is less than 0.60, ife and the quality of variables acce\(pted\), then supervision of coordinator questionnaire are above 0.8. The reliability test results of the research is the level of reliability acceptable, while the good is if it is including in the level of reliability is not good, above 0.7 to 0.8 Alpha formula. If t items are valid.

Based on table 3, the results of the study showed that the smallest calculated r value is 0.285 and the largest calculated r is 0.711 after being compared with r table 0.284 then all the question items r calculate > r table, this means that all question items are valid.

To determine the reliability of the research instrument used Alpha formula. If the Cronbach Alpha value is less than 0.60, including in the level of reliability is not good, above 0.7 to 0.8 is the level of reliability acceptable, while the good is if it is above 0.8. The reliability test results of the research questionnaire are showed on table 4 as follows:

| Variables | Alpha Coeff | Critical Value | Result |
|-----------|-------------|----------------|--------|
| Supervision (X1) | 0.767 | 0.6 | Reliabel |
| Motivation (X2) | 0.908 | 0.6 | Reliabel |
| ANC service quality (Y) | 0.902 | 0.6 | Reliabel |

The t test is used to show the effect of independent variables partially / individually on the dependent variable.

### C. Sub-Structure 1

Analysis of results based on table 5 on supervision of coordinator midwives has a positive effect on the work motivation of midwives (H2), obtained a significance value of 0.000< 0.05 (H2 accepted), then supervision of coordinator midwives has a statistically positive effect on the motivation of midwives work in the Pagiyaten Community health centre Tegal Regency. Analysis of results based on table 5 on supervision of coordinator midwives has a positive effect on the work motivation of midwives (H2), obtained a significance value of 0.000< 0.05 (H2 accepted), then supervision of coordinator midwives has a statistically positive effect on the motivation of midwives work in the Pagiyaten Community health centre Tegal Regency.

### D. Sub-Structure 2

Analysis of results based on table 6 is as follows:

- Supervision of the coordinator midwife has a positive effect on the quality of ANC (H1) service, obtained a significance value of 0.045 <0.05 (H1 accepted), then supervision of the coordinating midwife has a positive influence on the quality of ANC services.

- Work motivation has a positive effect on the service quality of ANC (H3), obtained a significance value of 0.040 <0.05 (H3 received), then work motivation statistically has a positive influence on the quality of ANC services.

Path analysis test is used to prove whether the work motivation variable is a variable that mediates between the supervision of the coordinating midwife and the quality of ANC services. The analysis is carried out based on the standardized coefficients value of the regression results as in table 5 and table 6 and path analysis can be made as follows:
The calculation of the correlation coefficient influencing the supervision of the coordinating midwife on the quality of ANC services with work motivation as an intervening variable is as follows:

\[
S_{ab} = \sqrt{a^2b^2 + b^2a^2} - \sqrt{a^2 + b^2} - \sqrt{a^2b^2}
\]

\[
S_{ab} = \sqrt{0.521^2 \times 0.251^2 + 0.312^2 \times 0.273^2 + 0.273^2 \times 0.251^2}
\]

\[
S_{ab} = 0.058113
\]

To test the significance of indirect influence, calculate the t value of the ab coefficient with the following formula:

\[
t = \frac{S_{ab}}{S_{ab}}
\]

\[
t = \frac{0.162}{0.241}
\]

Based on the answers to the supervision questions, the majority of respondents wanted that the supervision activities by the coordinating midwife were not carried out suddenly, but prior notice and supervisors would make alternative solutions. The results of this study in accordance with the research of Subekti examined that knowledge, motivation, supervision and rewards are related to performance [9]. Sulistyaningsih also argues that the most influential supervision is supervision with the performance of village midwives in Pati Regency [10]. The sub variables of supervision in this study, measured by indicators of supervision carried out by KIA coordinator midwives in the community health centre area of the village midwife covering the regularity of supervision implementation, indicators in supervision implementation (completeness of facilities and infrastructure & completeness of recording and reporting), results of supervision have been submitted to midwives village. This is also supported by research by Kurniawati [11], that the performance of village midwives is influenced by organizational factors, namely supervision by coordinating midwives in Banyumas Regency.

The sobel analysis was used to determine the effect of mediator variables, namely job satisfaction. The mediation hypothesis testing can be carried out by a procedure developed by Sobel (1982) and known as the Sobel Test (Sobel Test). This Sobel test is done by testing the strength of the indirect influence of the independent variable (X) on the dependent variable (Y) through the intervening variable (M). Y (b) or ab - M (a) with the path M - The indirect effect of X to M through Y is calculated by multiplying the path X.

Table 7 shows the path analysis image, it can be analyzed Supervision path of the coordinating midwife on ANC service quality through work motivation as follows:

The direct effect of supervision of the coordinating midwife on ANC service quality is 0.304.

The influence of coordinator midwife's supervision on work motivation is 0.521 and the influence of work motivation on ANC service quality is 0.312 thus the indirect influence of the coordinator midwife on ANC service quality through work motivation is 0.521 x 0.312 = 0.162

The results of the calculation showed that the indirect influence of the coordinator midwife on the quality of ANC services through work motivation was smaller than the supervising direct influence of the coordinating midwife on the quality of ANC services. Coordinator on the quality of ANC services through work motivation at midwives in the Pagiyanten Community Health Center in Tegal Regency.

Based on the answers to the supervision questions, the majority of respondents wanted that the supervision activities by the coordinating midwife were not carried out suddenly, but prior notice and supervisors would make alternative solutions to the ANC management so that it had an impact on good management. There are four major factors that benefit from supervision, which is to make sure that the program's objectives are right, can overcome the difficulties faced, can increase staff motivation, and can help improve staff performance and abilities.

Work motivation is a mental impulse that makes a worker moved to take productive actions, a strong impulse within the individual because it is one of the efforts to carry out activities that lead to the purpose of carrying out ANC in accordance with the quality standards of ANC services that is indicated by the attitude of midwives in carrying out ANC services in...
pregnant women in accordance with the standards that have been determined [23].

The results of this study are in accordance with the results of previous studies conducted by Wardani [12], Liana [13] and Putri [14] who found that supervision affects employee motivation, with high supervision resulting in better work motivation.

The results of this study are in accordance with the results of previous studies conducted by Koesmono [16], Ayu and Suprayetno [17] and Murti [18] who found that motivation has a significant effect on employee performance, the higher or positive employee work motivation, the higher employee performance.

The role of the coordinating midwife is expected to apply techniques, skills and knowledge including motivational theories to assist midwives in applying ANC practice standards. To produce good coaching, it requires facilitative and productive interaction and harmony between the coach and the coached. With the basis of good interaction this is then planned a solid and directed development strategy. Effective coaching will produce ethics, skill, efficiency and resilience. The quality of such midwives will have an impact in accelerating the reduction of maternal, newborn, infant and under-five mortality rates.

The results of this study are not in line with Nurbaeti which states that there are differences in compliance with implementing standards between the officers who get revised well and officers who are not properly supervised [19]. This is also relevant to the results of Guspianto’s study that supervision and motivation relate to the compliance of village midwives towards antenatal care service standards [20].

IV. CONCLUSION

Supervision of the coordinating midwife has a positive influence on the quality of ANC services to midwives in the Pagiyanten Community Health Center, Tegal Regency (p value 0.045 > 0.05). Supervision of the coordinator midwife has a positive influence on work motivation at the midwife in the Pagiyanten Community Health Center, Tegal Regency (p value 0.000 > 0.05). Work motivation has a positive influence on the quality of ANC services to midwives in the Pagiyanten Community Health Center, Tegal Regency (p value 0.040 > 0.05) Supervision of the coordinator midwife has an indirect positive effect on the quality of antenatal care services with motivation as an intervening variable for midwives in the Pagiyanten Community Health Center in Tegal Regency.

It is expected that midwives will always be given regular training on midwifery service standards, as well as monitoring the implementation of many BPM ANCIs that do not do, such as examination of LILA, DJJ and TFU according to gestational age, laboratory tests according to indications of pregnant women, so that in performing ANC services accordingly with service standards, as well as by installing reference leaflets for ANC services in accordance with instructions from the Ministry of Health.

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