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Determinant Of Using MEOWS in Community Center

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Abstract

Maternity Early Obstetric Warning System (MEOWS) is a very useful emergency screening instrument to anticipate the morbidity and mortality of pregnant women. Primary Health Care as one of the first-level health facilities is expected to be able to use MEOWS as a way to reduce MMR. The purpose this study to know the factors associated with the use of MEOWS by Primary Health Care Midwives in Sleman Regency. Quantitative research with cross sectional design. The study population is an inpatient primary health care midwife in the Sleman Regency area with the sample of 68 midwives through proportional stratified random sampling techniques. Data collection is using questionnaires that have been tested for validity and reliability. Hypothesis testing uses the chi square test. There is a relationship between socialization ($p<0.003$) and training ($p<0.000$) about MEOWS with the use of MEOWS. There is no relationship between age ($p<0.561$), education level ($p<0.69$), length of work ($p<0.716$), knowledge level ($p<0.576$), and superior support ($p<0.861$) with the use of MEOWS. There is a relationship between socialization and training about MEOWS with the use of MEOWS by midwives of Primary Health Care in the Sleman Regency area.

Keywords: Midwife, MEOWS, Maternity.

INTRODUCTION

Mortality and morbidity among pregnant and birthing women and newborns have long been a problem, especially in developing countries. Maternal mortality rate (MMR) is still high and is still a concern for the world, especially Indonesia. The MMR in Indonesia in 2020 reached 230 per 100,000 live births(Ministry of Health of the Republic of Indonesia., 2020). One of the factors causing maternal mortality is the presence of various risk factors for emergencies during pregnancy, both low risk and

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high risk. To decrease MMR, the Indonesian government through the Indonesian Ministry of Health has implemented various efforts, starting in 1990 through the Safe Motherhood Initiative, Gerakan Sayang Ibu (1996), Making Pregnancy Safer (2000), Expanding Maternal and Neonatal Survival (2012), and the BPJS-JKN program, but there are still 19 provinces that have not met the Strategic Plan target of 77% of safe maternity facilities assisted by health staff(Muhammad et al., 2020).

Sleman is one of the regencies in Yogyakarta province. In this Regency, the maternal mortality rate (MMR) for pregnant women ranks 2nd in DIY Yogyakarta. This is because of the persistent monitoring to prevent the occurrence of worsening in pregnant patients, especially during the Covid 19 pandemic(DIY Province Health Office., 2021). Several methods of monitoring early detection of pregnancy risk have been implemented in the following World Health Organization (WHO) recommendations Determining the criteria for hospitalization in patients with Covid-19 symptoms without any obstetric problems can use the Maternal Early Obstetric Warning Score (MEOWS)(POGI., 2020).

MEOWS (Maternal Early Obstetric Warning Score) is a method presented in chart form with general physiological parameters (respiratory frequency, oxygen saturation, body temperature, systolic blood pressure, pulse rate, level of consciousness) and pregnancy specific (diastolic blood pressure, pain intensity, antenatal and postnatal vaginal discharge, proteinuria)(Austin et al., 2014). The patient's prognosis is highly dependent on the healthcare professional's accuracy in identifying the problem and the rapidity of the response. Singh, et al found that MEOWS was 89% sensitive and 79% specific to medical disorders of pregnancy such as PPP, preeclampsia, and infection(Mackintosh et al., 2014). Based on this, the researcher wants to examine the factors associated with the use of MEOWS by Community Health Center midwives in the Sleman Regency Area.

METHODS

Design

In this study, the research design used was cross sectional. This design is used to determine the correlation between independent variables (risk factors) and dependent variables (effects) by taking measurements at the time of diagnosis(Sastroasmoro et al., 2011).

Population and Study Setting

Target population

The target population of the study were all Puskesmas midwives working in the Sleman Regency area, with 215 midwives distributed across 25 Puskesmas.

Targeted population

The population targeted for the study were inpatient health center midwives working in the Sleman Regency area. According to data from the Ministry of Health's Health PPSDM Agency in 2020, there are approximately 120 inpatient health center midwives in the Sleman Regency area.

Sample

The sample in the study was collected using proportional stratified random sampling technique, which is a technique of sampling data in the population that is diverse, it consists of levels that are inequality and the number of level units is not the equal(Sastroasmoro et al., 2011). In Sleman Regency there are 215 midwives distributed in 25 health centers. And the sample in this study were midwives who Worked at the inpatient health center in Sleman Regency.

Criteria are used to determine the sample selection and to eliminate bias. The inclusion criteria in this sampling are: Midwives, Work in the inpatient health center in the Sleman Regency Region, nursering the maternity patient, Agreeing to be a respondent.

The sample size in this survey was calculated using the Slovin formula(Sastroasmoro et al., 2011). The formula was used to calculate the sample in this study:

$$n = \frac{N}{1 + N(e^2)}$$

Description:

N = total population; n = population sample; e = 10% probability (0.1).

Variables

This study has two variables:

independent variable

Independent variables are variables that cause changes or the inception of dependent variables (bound). The independent variables of this study are age, education level, work experience, socialization about MEOWS, training about MEOWS, knowledge about MEOWS, and supervisor support.

Dependent Variable

The dependent variable (dependent variable) is the variable that is influenced or becomes the result of the independent variable. The dependent variable in this study is the use of MEOWS.

Data collection

The data in this study are obtained from both primary and secondary sources by methods for collecting information(Sugiyono., 2017) like using questionnaires via Google Forms, and the findings are collected and processed.

Data Analysis

According to Arikunto et al., 2010, data analysis in this study was of two types: univariate analysis for each variable from the research by examining its percentage through the descriptive frequencies test and bivariate analysis to see the correlation of two variables in the distribution table with the chi square statistical test of the contingency coefficient (C)(Arikunto., 2010). The contingency coefficient is calculated by following the procedure:

$$C = \sqrt{\frac{x^2}{x^2 + N}}$$

Description:

N: Number of respondents, X2: Chi-Square

To calculate C, we must first find X2, hence we must first determine the X2 formula with:

$$X^2 = \sum_i^k \frac{(0 - E)^2}{E}$$

Description:

0: the frequency of observation ("fo"); E: the frequency of expectation ("fh").

Ethical Aspects

Research ethics includes the researcher's attitude or the researcher's attitude to the research subject as well as researcher's impact on the public. The subject in this study is human. Before the research was in process, the researcher submitted an ethical clearance to the Ethics Committee of the Poltekkes Kemenkes Yogyakarta to obtain the ethical eligibility of the research. Four principles that must be followed by researchers, including(Riwidikdo., 2013):

1. Respect for human dignity;

2. Respect for the privacy and confidentiality of research subjects;

3. Respect for justice and inclusiveness;

4. Balancing harms and benefits).

RESULTS

Correlation between the characteristics of respondents and the implementation of MEOWS

This research was conducted for 2 months, from January to February 2022 at the Sleman Regency Inpatient Health Center for 68 respondents. The results of the experiment can be viewed from the following table.

Univariate Analysis (respondent characteristics)

The univariate analysis in this study consists of the regression frequency of responses according to the characteristics of the respondents, the frequency distribution of respondents on the variables in this study. Respondent characteristics include age, work experience, education, socialization, training, supervisor support and knowledge as shown in Table 1:

Table 1. Variable Frequency Distribution of age, work experience, education, socialization, training, supervisor support and knowledge.

Variable	Frecuency	Presentage (%)
Age		
20 - 40 years	51	75
>40 years	17	25
Total number	68	100
Education		
Diplom	52	76.5
Bachelor	16	23.5
Bachelor+Profesion	0	0
Magister	0	0
Total number	68	100
Work experience		
< 5 years	1	1.5
5 - 10 years	26	38.2
>10 years	41	60.3
Total number	68	100
Socialization of MEOWS		
never		
ever	61	89,7
	7	10.3
Total number	68	100
Training of MEOWS		
never		
ever	67	98.5
	1	1.5
Total number	68	100
Head support		

good	2	2.9
not good	66	97.1
Total number	68	100
knowladge		
good	52	76.5
middle	16	23.5
less	0	0
Total number	68	100

Table 1 shows that the distribution of respondents by age group 20 to 40 years is 75%. Whereas the distribution of respondents with an intermediate level of education was 52 people. Moreover, the majority of respondents have worked for more than 10 years, equal to 41 people.

Univariate analysis on MEOWS program socialization demonstrated that 89.7% of respondents had not participated in MEOWS program socialization, and 10.3% of respondents had participated in MEOWS program socialization. As a total of 97.5% of respondents have never attended MEOWS training, the remaining 1.5% have attended MEOWS training. The percentage of respondents based on supervisor support was 2.9% of respondents received positive support from their superiors, while the other 97.1% of respondents reported a decrease in support from their superiors. For the knowledge variable, 76.5% of respondents had an excellent knowledge of MEOWS and the other 23.5% of respondents had moderate knowledge of MEOWS.

Bivariate Analysis

The results of bivariate analysis of the correlation between age, education, work experience, socialization about MEOWS, training about MEOWS, supervisor support and education about MEOWS on the use of MEOWS by Puskesmas midwives in the Sleman Regency area can be seen in the following table 2.

Table 2. The results of bivariate analysis of variables of age, work experience, education, socialization, training, supervisor support and knowledge.

Variable	Using MEOWS						
	No using Meows		using Meows		Amount		p
	n	%	n	%	n	%	
Age							
20 - 40 years	50	73,5	1	1,5	51	75	
>40 years	17	25	0	0	17	25	0.561
Total number	67	98,5	1	1,5	68	100	
Education							
Diplom	52	76,5	0	0	52	76,5	

Bachelor	15	22	0	1,5	16	23,5	0.69
Bachelor+Profesion	0	0	0	0	0	0	
Magister	0	0	0	0	0	0	
Total number	67	98,5	1	1,5	68	100	
Work experience							
< 5 years	1	1,5	0	0	1	1,5	
5 - 10 years	26	38,2	0	0	26	38,2	0.716
>10 years	40	58.8	1	1,5	41	60,3	
Total number	67	98,5	1	1,5	68	100	
Socialization of							
MEOWS	61	89,7	0	0	61	89,7	
never	6	8,8	1	1,5	7	10.3	0.003
ever							
Total number	67	98,5	1	1,5	68	100	
Training of MEOWS							
never	67	98,5	0	0	67	98,5	
ever	0	0	1	1,5	1	1,5	0.000
Total number	67	98,5	1		68	100	
Head support							
good	2	3	0	0	2	3	
not good	65	95,5	1	1,5	66	97	0.861
Total number	67	98,5	1	1,5	68	100	
knowladge							
good	51	75	1	1,5	52	76,5	
middle	16	23,5	0	0	16	23,5	0.576
less	0	0	0	0	0	0	
Total number	67	98,5	1	1,5	68	100	

The results of the chi square test on the 7 factors presented in table 2 demonstrate that there are two variables that show a correlation with the usage of MEOWS by puskesmas midwives in the Sleman Regency area with a p-value less than 0.05. According to the findings, these variables are socialization and training, with p-values of 0.003 and 0.000.

The chi square test results for other variables including age, education, work experience, supervisor support, and knowledge all showed p values >0.05, implying that these characteristics are unrelated to the adoption of MEOWS.

Correlation of respondent statistics with the application of MEOWS

The results of univariate analysis indicated that this study found that the respondents who work in inpatient health centers are mostly in the age range of 20 to 40 years or the productive age group. Age plays a role in predisposing factors in the application of MEOWS. Productive age is related to a higher level of productivity than older age. This is in accordance with research conducted by Line et al in 2021 which indicated that 61.2% of respondents in their research entitled Midwives' experiences of using the Obstetric Norwegian Early Warning System

(ONEWS): A national cross-sectional study is a midwife with an age of less than 45 years(Fladeby et al., 2021).

The p-value in the bivariate study of age variables and the application of MEOWS is 0.561, indicating that the p-value is greater than 0.05, implying that there is no correlation between age and the use of MEOWS. This is consistent with Yuli 2012 study on a correlation between age and midwifery experience in the implementation of the jampersal program, which revealed no significant (Andriani., 2021).

The non-significant correlation among age and MEOWS application is based on the researcher's assumption that the application is not influenced by the person's age. regardless young or old, is not necessarily an accurate indicator of performance. Midwives, as health workers and the leaders of health initiatives that focus on reducing MMR and IMR, must be mentally and physically mature in their actions and decisions. Midwives of all ages are required to be motivated to learn and implement new ideas to reduce maternal mortality, one of which is the use of MEOWS.

According to univariate results on education characteristics, 76.5% of respondents are midwives, while the other 23.5% are undergraduates. Based on Line et al's research in Norway in 2021, 77.2% of respondents in their study were midwives with a midwifery diploma educational background (Fladeby et al., 2021).

The p-value of 0.69 on the education variable in the bivariate analysis suggested that education had no connected with the application of MEOWS. According to Midwifery Law No 4 of 2019, article 43, midwives with a third diploma can only practice midwifery in health care facilities; the exclusion of mandatory regulations for undergraduate education for midwives also contributes to the high number of diploma III graduates. According to Robbins (2001), the intellectual capacity required for adequate work performance is determined by the job's capability requirements(Robbins et al., 2001). These ability standards are frequently achieved if a person has finished a specific degree of education. Individual abilities will often growth with the degree of academic achievement finished; however, midwives practicing midwifery in health facilities must have a minimum education of diploma III midwifery. Education is one of the most critical variables in midwives' performance. Midwives' years of education can be used as an indicator of their potential for developing innovations to reduce MMR, one of which is the application of MEOWS.

Based on the bivariate analysis results, the p-value result indicated a p-value of 0.716 on the duration of work variable, indicating that the time of work has no correlation with the application of MEOWS. This is consistent with Herna Linda's research 2021, which analyzed the influence of personal characteristics and external factors on midwife

quality; the findings demonstrated that there was no connection among time of work and midwife performance14. Employment history is a background that improves midwives' activity, in this case with the application of MEOWS. Time of work and case management background will be related to skills and innovation in midwifery services. However, work experience that has been around for a long time does not mean that a person is more productive than others who have not been working for a long time. The work experience their performance will increase, but at some point it will remain or even decrease due to the burnout factor in the work environment.

Correlation between the socialization, training, supervisor support and knowledge with the application of MEOWS

a. Based on the results of bivariate analysis, the p-value of the variable socialization on the application of MEOWS is 0.003, this indicates that the variable socialization has a correlation with the use of MEOWS. Socialization is an important factor for the effective application of MEOWS. This shows that midwives at the health center have not implemented MEOWS because they have not socialized MEOWS. According to Soerjono (2011), socialization is the process of communicating knowledge to new members of a community(Soekanto., 2011). Socialization is capable of taking place by way of direct or indirect social interaction. Socialization is possible by social groups including family, friends, and schools, and additionally by the work environment and the media. Seminars, for example, might be a platform for socialization by the media.

b. Based on the results of statistical analysis on the variable of training, the p-value is 0.000, which implies that there is a correlation of training with the application of MEOWS. This is in accordance with research by Kristinawati (2011) which suggested that there is a correlation of training with the midwives' performance in Bantul Regency(Kristinawati., 2011).

According to Notoadmojo, training is a method of developing human resources in which the training is part of a formal education program aimed at improving a person's work capacities and skills. Training is typically completed in less time than education, is more focused on specific competencies, and is required in the execution of tasks17. The training is also constantly reviewed and analyzed to guarantee that the MEOWS application is as expected.

The application of MEOWS is an unusual procedure for midwives working in health centers, but as technology advances, the application of MEOWS will be required in all health facilities that manage maternal patients. The importance of collaboration among all parties is critical for the successful implementation of MEOWS at the health center(Hamida., 2012).

c. The bivariate analysis for the variable of superior support showed a p-value of 0.861, demonstrating that there was no correlation of superior support and the application of MEOWS. This is consistent with the findings of Ribka (2016), who reported no correlation of leader support and prenatal screening of midwife villages in Magelang Regency(Ribka., 2015).

A leader must provide diverse skills, experiences, personalities, and rewards to each of his employees. In practice, leaders can impact the work of an organization's motivation and excitement, security, quality of life at work, and, most importantly, degree of achievement. By examining the members' primary needs. Physiological or non-physiological demands include relationships, admiration, and self-actualization. The most effective strategy is to motivate people Towards organizational goals by inspiring them individually. Because everybody has specific objectives in performing their actions For successful goal unity, the leader has the responsibility motivate his colleagues so that their activities improve and avoid deviating off from the goal. Leadership support is a positive aspect, indicating it affirms or supports improvements in a person's behavior related to health. Leadership support for Health center midwives during the application of MEOWS is respondents' impression of leadership support, specifically the head of the health center and the coordination midwife who instructs in initiating or making new innovations, specifically the application of MEOWS.

Midwives in this survey reported that exceptional support was still required in the context of applying MEOWS at their health center. This is also possible if the leader, in this example the head of the health center and the coordinating midwife, is completely unaware of MEOWS. The need for coordination from the relevant health offices in order to begin innovating the application of MEOWS at the health center so that the heads and coordinating midwives are able to offer information about MEOWS to their employees, in this case the midwives who work at the inpatient health center.

d. According to the bivariate analysis results, the p-value for the variable of knowledge is 0.576, indicating that there is no correlation in knowledge and MEOWS application. This is consistent with study from the Gresik Regency Inpatient Health Center, which reported no correlation of knowledge and midwife performance in applying prenatal care standards20. When it comes to midwifery performance, knowledge is the most important component. The result of "knowing" is knowledge, that develops when people observe a certain item. The five human senses, namely sight, hearing, smell, taste, and touch, are capable of identifying an object. The degree of attention to the perception of the item at the moment of sensing to develop knowledge is strongly influenced. The majority of human information is acquired by the eyes

and ears. Most midwives who work at the inpatient health center are already familiar with MEOWS; it is natural that after learning about MEOWS, the application of MEOWS can be introduced immediately at health center.

Based on the research explained above, it is possible to deduce that socialization and MEOWS training are factors related with MEOWS application. The application of MEOWS by midwives at the health center has been the most most effectively coordinated of all the variables analyzed. MEOWS are still unfamiliar to health center midwives in Sleman Regency because to a low level of socialization and training on MEOWS, as well as a lack of support from superiors. MEOWS is not included as a method for reducing MMR in the Sleman region health profile. This is in contrast to the health office of Yogyakarta City, which stated in its health office profile for 2021 that it would socialize and implement the Modified Early Obstetric Warning System (MEOWS) to recognize early signs and symptoms of obstetric emergencies in health facilities as part of its improvement efforts in controlling MMR(Yogyakarta City Health Office., 2021).

CONCLUSIONS

Midwives in Sleman Regency inpatient medical centers are mainly in the ages of 20 and 40, with an average education of an associate degree and a work experience of more than ten years. There is no correlation between the application of MEOWS and the measuring factors (age, education, and length of work). Furthermore, there is no correlation between MEOWS knowledge and supervisor support and MEOWS application, although there is a correlation between socializing and training.

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