



Maternal Emergency Management at The Brati Health Center, Grobogan Regency, Central Java Province, Indonesia

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Abstract. Background: Indonesia ranks second in terms of maternal mortality in Southeast Asia while the highest maternal mortality rate in Indonesia was contributed by the provinces of West Java, East Java, and Central Java. Since then, Central Java Province made a mapping of maternal mortality locations last year and Grobogan Regency had the highest number of maternal deaths, particularly in the area of Brati. Even at the beginning of 2022, there had been a maternal death in the area of Brati due to cephalo-pelvic disproportion (CPD).

Aim: Therefore, this study aimed to describe maternal emergency management at the Brati Health Centre.

Methods: The design of this study was explanatory research with a cross-sectional approach and the respondents are midwives in Brati Health Centre. After one month of data collecting, this research has reached 8 respondents that were 30–48 years of age with various education levels and long years of experience.

Results: The result of this study showed that half of the respondents have done the assessments of maternal emergency cases better and the majority of respondents have managed the cases better too. However, there were only 3 of 8 respondents who had experienced maternal emergency courses. Even more, there was still one respondent who never did any maternal emergency course.

Conclusion: In conclusion, maternal emergency management at Brati Health Care were good enough but there were some improvements needed, such as conducting a maternal emergency course.

Keywords: maternal mortality · maternal emergency management · maternal emergency course

1 Introduction

Sustainable Development Goals (SDGs) adopted by United Nations in 2015 have 17 integrated goals which the third is good health and well-being which consists of 13 targets [1]. Although the first of the 13 targets is reducing the global maternal mortality ratio to less than 70 per 100,000 live births by 2030, the maternal mortality rate in Indonesia is

still 305 per 100,000 live births and it ranks the 2nd highest among South-Asia countries [2–4]. In addition, the baseline of the maternal mortality rate of Indonesia in 2019 was 183 per 100,000 live births for the year 2024 [5] then the pandemic of Coronavirus Disease (Covid) occurred. Hence, Covid-19 became the most cause of maternal mortality in Indonesia last year with 2,982 cases in 2020 followed by hemorrhage (1,320 cases), and preeclampsia/eclampsia (1,077 cases) [6].

Among the provinces in Indonesia, Central Java Province ranked the 3rd highest in maternal mortality cases last year [7] and the number increased from 530 in 2020 to 867 in the three months beginning of the year 2021 [8]. In addition, Grobogan Regency had the highest number of maternal mortality cases in Central Java Province [9] with 8 cases per year in average and a mortality case has occurred in the beginning of the year 2022 because of Cephalo-pelvic Disproportion (CPD) at Brati Health Centre [10]. The death case showed that maternal health status in Brati decreased.

Maternal health status in the framework of PRECEDE-PROCEDE was caused by behavior and lifestyle also environment factors so a priority had to be chosen based on significance and convenience [11]. Thereafter, the behavior of pregnant women and midwives become the most important variables but a majority of research only focused on the patient's behavior. For example, an analytic study on the early detection of pregnancy danger signs in 2019 revealed that most characteristics of pregnant women who did not recognize the danger signs were jobless, the risked age (less than 20 or more than 35 years old), finished lower education levels (elementary and junior high school), had the negative mentality and less knowledge, also had information from health providers only [12]. Then, a study of the knowledge about the danger signs of pregnancy showed that the majority of pregnant women just enough understood, not very well, about danger signs of pregnancy [13]. However, almost none of the research in Indonesia assesses the behavior of midwives.

Health providers, especially midwives, have to assess signs and symptoms of maternal emergency cases according to the Ministry of Health of Indonesia, such as cyanosis, vaginal bleeding, convulsion, hypertension, fever, abdominal pain, and increasing heart rate [14]. Then after finding a maternal emergency case, oxygen must be supplied, crystalloid liquid has to be infused, and sometimes resuscitation steps should be done [15]. Therefore, this study aimed to describe maternal emergency management at the Brati Health Centre, Grobogan Regency, Central Java Province.

2 Method

The design of this study was explanatory research with a cross-sectional approach and the variables of maternal mortality management were the assessments and the implementations. Firstly, the characteristics of respondents identified include age, educational level, and years of experience. Secondly, respondents were asked 10 questions about the assessments and implementations. Thirdly, data were collected, edited, scored, categorized, coded, tabulated, then analyzed. This study took one month to complete.

In addition, the categories of maternal emergency management were divided by the average scores of respondent answers. Due to the average scores, the respondents whose total scores in assessments were 21.75 or more were grouped as very good. Also, the respondents whose total scores in implementations were 14.25 or more were grouped as very good.

3 Result

The result of this study shows in Table 1. Overall, they had a fairly long age range, various education levels, and years of experience. Meanwhile, maternal mortality management still needs some improvements.

The youngest respondent was 30 years old while the oldest one was 48 years of age. The age average of respondents was 39.75 years old. Almost all of the respondents had experience as a midwife of more than 10 years and only 2 respondents had graduated with professional education in midwifery (Table 1). Therefore, the educational level should be increased.

Meanwhile, half of the respondents were categorized as very good in assessments of maternal mortality cases and 62.5% of respondents were grouped as very good in treatment (Table 2). However, paying attention to cyanosis and counting the pulse was not always done by the half of respondents (Table 3). Hence, assessments of maternal emergency cases have to be trained intensively.

Unfortunately, there was still one respondent who never trained and there were only 3 respondents who always had maternal emergency training (Table 3). The training based on their answers were drill of maternal emergency handling, midwifery update, training of Helping Mothers Survive and Helping Baby Breath (HBB and HMS), also training in obstetric-neonatal emergency care (called PPGDON; an abbreviation of Pelatihan Pelayanan Kegawatdaruratan Obstetri Neonatal). Therefore, even distribution of access to any training has to be increased among respondents.

Table 1. Characteristic of Respondents

Code	Age	Year of Experience	Level of Education
1.	30	5–10 years	Diploma III
2.	43	More than 10 years	Diploma III
3.	46	More than 10 years	Diploma III
4.	43	More than 10 years	Professional Education
5.	33	More than 10 years	Professional Education
6.	38	More than 10 years	Diploma III
7.	48	More than 10 years	Diploma III
8.	37	More than 10 years	Diploma III

Table 2. Frequency Distribution of Maternal Emergency Management in Brati Health Centre, Grobogan Regency, Central Java Province

Maternal Emergency Management	Frequency	Percentage
Assessment		
Very good (21.75 or more)	4	50%
Good enough (less than 21.75)	4	50%
Treatment		
Very good (14.25 or more)	5	62.5%
Good enough (less than 14.25)	3	37.5%
Total	8	100%

Table 3. Frequency Distribution of Detailed Answer to Maternal Mortality Management at Brati Health Center, Grobogan Regency, Central Java Province

Questions	Always	Often	Seldom	Never
Assessment				
1. Did you notice the cyanosis in the patient?	4 (50,0%)	3 (37,5%)	1 (12,5%)	0
2. Did you check for vaginal bleeding when examining the patient?	6 (75%)	2 (25,0%)	0	0
3. Did you check the gestational age when the pregnant woman had a seizure?	8 (100%)	0	0	0
4. Did you check the blood pressure when your patient had a seizure?	7 (87,5%)	0	1 (12,5%)	0
5. Did you check the patient's temperature?	5 (62,5%)	2 (25,0%)	1 (12,5%)	0
6. Did you check the pulse when pregnant women felt abdominal pain?	4 (50,0%)	3 (37,5%)	1 (12,5%)	0
7. Do you supply oxygen to pregnant women who had seizures?	6 (75,0%)	2 (25,0%)	0	0
Implementation				
8. Did you infuse crystalloid to pregnant women who were bleeding?	7 (87,5%)	1 (12,5%)	0	0
9. Did you prepare a set of resuscitation kits at the clinic?	6 (75,0%)	2 (25,0%)	0	0
10. Have you attended maternal emergency training?	3 (37,5%)	2 (25,0%)	2 (25,0%)	1 (12,5%)

4 Discussion

Midwives have an important role in prevention of maternal mortalities. The prevention levels have been divided into five levels including health promotion, specific protection, early recognition and prompt treatment, disability limitation, and rehabilitation [16]. Meanwhile, the prevention behavior in this study was an early diagnosis that was done by assessment of signs and symptoms. Besides, care and treatments given by midwives were a kind of prevention too. Fortunately, half of the respondents were categorized as very good in assessments of maternal mortality cases. Even the majority of respondents (62.5%) were grouped very well in the care and treatment.

The behaviors of respondents were affected by predisposing factors such as age, level of education, and years of experience. It was proven by a study conducted in Jakarta that revealed the performance of civil servants correlated with age, level of education, work abilities, and working life [17]. In spite of it, research in health cadres showed that there was no correlation between age, education, and years of experience with performance in the eradication of Dengue fever [18].

The average age of respondents in this study was 39.75 years old and it was still the ideal age to work. Even research about the performance of health providers in a hospital showed that health providers with an average age of 36–45 years old had better leadership behavior [19]. Moreover, a study of agricultural assistant performance revealed that age had a significant correlation with work performance [20]. Besides, the level of education has an important correlation with the work performance of agricultural extension assistants.

Unfortunately, there were only two respondents who had professional education in midwifery. In fact, the government of Indonesia passed the law of midwifery, number 4 the year 2019, which stated professional midwifery education as one of the requirements for midwifery independent clinics [21]. Although the midwives with diploma III levels of education were allowed to give midwifery care, they had to handle midwifery cases under a doctor's supervision and had different powers from the ones who graduated with professional education in midwifery [22].

Level of education was not the only measurement for midwifery expertise, but also for years of experience and training in the midwifery field. Fortunately, the majority of respondents had more than 10 years of experience and ever completed some training. According to a study of midwife performance in intranatal care at Merangin regency, the experiences correlated with the performance of midwives but the training did not [23]. However, the same research conducted at Sulamadaha Health Center revealed that the training correlated with the performance of midwives in intranatal care but the years of experience did not [24]. Therefore, advanced studies should be conducted for identifying years of experience and training as enabling factors of midwifery care.

5 Conclusion

Early diagnosis and prompt treatments had done well because the majority of respondents had categorized as very good in assessment and giving midwifery care. It means that the health behaviors of respondents matched the rules. The behaviors might be affected

by the ideal age of working, more than 10 years of experience, and diploma level of education as predisposing factors. Also, the behaviours might be correlated with some trainings as an enabling factor.

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Authors' Contributions. Almost all studies about maternal mortality concern the health behavior of pregnant women and their families. Meanwhile, research about the behavior of midwives was still rare. Therefore, this study will complete the gap.

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