(RESEARCH ARTICLE)

Readiness of midwives and health facilities for neonatal resuscitation in the Mojosari Health Center Area, Mojokerto

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Abstract

Asphyxia refers to the failure of a baby to initiate or maintain spontaneous breathing at birth, often necessitating resuscitation to prevent morbidity and mortality. The availability of facilities and the role of health workers significantly influence the provision of adequate interventions for asphyxia cases. This study employs a descriptive observational design using a cross-sectional survey approach. Sampling was conducted comprehensively, and primary data were collected through questionnaires. The results indicate that the age of midiwives private practice in the Mojosari Community Health Center, Mojokerto, ranges from 40 till 76 years. The midwives have attended training programs such as APN, PPGDON, Resuscitation, MU, and PONED; however, none possess the latest midwifery professional education. Their experience spans from 16 to 55 years, and they handle an average of 1–2 newborns each month. While the midwives demonstrate adequate knowledge of resuscitation, they lack practical experience due to the absence of asphyxiated cases in the past year. Additionally, none have access to complete resuscitation equipment.This study highlights the need for neonatal resuscitation training to enhance the knowledge and skills of midwives. Efforts to equip midiwives private practice with adequate facilities are crucial for improving neonatal outcomes, ensuring safer childbirth for mothers and infants.

Keywords: Neonatal resuscitation; Midwife readiness; Health facilities; Midwives private practice

1. Introduction

Neonatal deaths are mostly caused by prematurity, sepsis and asphyxia [1]. Asphyxia is the failure of a baby to initiate or maintain spontaneous breathing at birth. This situation often requires neonatal resuscitation to prevent morbidity and mortality associated with hypoxic-ischemic tissue injury (brain, heart, kidneys) and restore spontaneous breathing and required cardiac output [2]. When asphyxia occurs, the baby's body attempts to distribute oxygen and restore cardiac output to protect its vital organs [3]. In this case, accuracy, speed and skills are needed by health workers, especially midwives as care providers, to provide comprehensive and professional midwifery care for neonates because the golden limit of success is in primary health facilities.

The readiness of midwives in neonatal resuscitation can reduce the neonatal mortality rate by 72.6% which includes experience, knowledge, skills, teamwork and neonatal resuscitation facilities, while efforts to increase the readiness of midwives can be done by training and developing the skills of health workers so that they can increase their competence. to perform neonatal resuscitation [4]. Mojosari District occupies the 5 highest sub-districts in cases of neonatal deaths. Most of this is caused by low birth weight and respiratory problems or asphyxia [5].

Neonatal resuscitation is an important thing to study, considering that asphyxia is one of the most common causes of neonatal death. There is no data related to resuscitation in the midiwives private practice working area of the Mojosari Community Health Center, Mojokerto, making this research important to carry out to examine not only the readiness of

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midwives but also health facilities in neonatal resuscitation in the midiwives private practice working area of the Mojosari Community Health Center, Mojokerto so that this research is expected to be a reference and evaluation in order to reduce the neonatal mortality rate in the region.

2. Material and methods

This research is a descriptive observational type of research with a cross sectional survey approach. Sampling was carried out comprehensively or total sampling (six persons) with the condition of inclusion of midiwives private practice leaders with delivery services in the working area of the Mojosari Community Health Center, Mojokerto who were willing to be respondents. The research was carried out in all midiwives private practice working areas of the Mojosari Community Health Center, Mojokerto with delivery services in the period July-October 2024.

Data collection techniques were obtained from primary data using a questionnaire adapted from Mahendra Tri Arif Sampurna's research which had been validated from previous publications, Indonesian minister of health regulation number 53 of 2014 concerning Essential Neonatal Health Services, Indonesian minister of health regulation number 43 of 2019 concerning Primary Health Facility Service Standards. Data analysis was carried out using descriptive analysis which was carried out to see a description of each variable studied.

3. Results

Mojosari Health Center, Mojokerto is located on Hasanudin Candirejo Street, Meduran Hamlet, Awang-awang Village, Mojosari District, Mojokerto Regency which houses 10 midiwives private practice with 6 of them being midiwives private practice with delivery services. The results of research at the midiwives private practice working area of the Mojosari Community Health Center, Mojokerto are as follows:

3.1. midwife's age

Based on the research results, it was found that the ages of the midwives were 40 years (33.33%), 48 years (16.67%), 50 years (16.67%), 52 years (16.67%), and 76 years (16.67%). Therefore, it can be seen that the youngest midwife is 40 years old, while the oldest is 76 years old. This data also shows that the largest proportion of midwives is 40 years old, accounting for 33.33%.

3.2. Training that midwives have attended regarding neonatal resuscitation

Based on the research results, it was found that the training attended by midwives from the total sample included APN training with 6 participants, accounting for 100%. Additionally, 1 person (16.67%) attended training on Handling Obstetric and Neonatal Emergency Patients (PPGDON), 3 people (50%) attended resuscitation training, 4 people (66.68%) attended Midwifery Update (MU) training, and 1 person (16.67%) attended Basic Neonatal Emergency Obstetric Services (PONED) training.

3.3. Levels of midwifery education

Based on the research results, it was found that the majority of midwives with midwive private practice held a bachelor's degree in midwifery (66.67%), while a smaller portion held a diploma in midwifery (33.33%).

3.4. Experience as a midwife

Based on the research results, it was found that there were 2 midwives with 16-20 years of work experience, accounting for 33.33%, 3 midwives with 26-30 years of experience, accounting for 50%, and 1 midwife with more than 36 years of experience, accounting for 16.67%. From this data, it can also be seen that the youngest midwife has 16 years of experience, while the midwife with the longest experience has 55 years.

3.5. Babies delivered in a month

Based on the research results, the findings showed that 33.33% of midwives handled 1 baby, 33.33% handled 2 babies, 16.67% handled 3 babies, and 16.67% handled 6 babies. From this data, it can be known that midwives handle at most 1-2 babies in a month. The minimum number of babies handled by midwives is 1 in a month, and the maximum number is 6 in a month.

3.6. Midwife's resuscitation knowledge

Table 1 The distribution of midwives' knowledge regarding neonatal resuscitation

No.	Variable	Percentage (n=6)
1	Good (≥ 75)	0%
2	Satisfactory (60-75)	66,67%
3	Insufficient (≤55)	33,33%
Total		100%

Results of the midwife's knowledge questionnaire regarding neonatal resuscitation

Based on the research results, it was found that the majority of midwives had sufficient knowledge of resuscitation, namely 66.67%, and there were no midwives who had good knowledge of resuscitation

3.7. Midwife's experience in carrying out resuscitation in past year

Based on the research results, it was found that all midwives with TPMB in the working area of the Mojosari Community Health Center had no resuscitation experience in the past year. This was because there were no babies experiencing asphyxia, so there was no need for neonatal resuscitation. Additionally, the implementation of good early detection for pregnant women who are at risk of birth asphyxia has been carried out during pregnancy

3.8. Health facilities

Table 2 The distribution of resuscitation facilities are not available in midwifery private practices

Clinic	Variable	Percentage (n=6)
1	Baby suction pump is not available	16,7%
2	Epinephrine is not available	16,7%
3	O_2 saturation, blood sugar meter, baby suction pump, and epinephrine are not available	16,7%
4	O_2 saturation, Delee, Dextrose, and epinephrine are not available	16,7%
5	Baby suction pump and epinephrine are not available	16,7%
6	New born bang & mask, O_2 saturation, Delee, epinephrine, and Dextrose	16,7%
Total		100%

Results of the resuscitation facilities questionnaire

Table 3 The distribution of resuscitation facilities are not available in midwifery private practices

No.	Variable	Percentage (n=6)
1	Epinephrine	83,33%
2	Baby suction pump	50%
3	O_2 saturation	50%
4	Dextrose	50%
4	Delee	33,33%
5	New born bang & mask	16,7%
6	Blood sugar meter	16,7%

Results of the resuscitation facilities questionnaire

Based on the research results, it was found that none of the midwive private practices in the Mojosari Health Center working area had complete resuscitation equipment. A small number of midwifery private practices do not have blood sugar meters and

the newborn bag & mask, accounting for 16.67%. Meanwhile, the majority of midwive private practices did not have epinephrine, with 5 midwive private practices lacking it, accounting for 83.33%

4. Discussion

The research results show that 33.33% of midwives are aged 41-45 years, 33.33% are aged 46-50 years, 16.67% are aged 51-55 years, and 16.67% are over 55 years old. The existence of licenses for midwives from the government to contribute to improving maternal and child health has allowed midwives to dedicate their lives and knowledge as pioneers in health. As midwives age, they gain more experience and skills in providing services [6]. This is related to the increasing number of interventions midwives perform with clients as they age. However, other studies have shown that there is no correlation between age and healthcare workers knowledge, as physical and cognitive decline occurs with age [7].

This study shows that 100% of midwive private practices in the Mojosari Health Center working area have participated in APN training. Therefore, all respondents have made efforts to improve their soft skills in assisting normal deliveries safely. As healthcare professionals with higher education, participation in training activities cannot be ignored as part of efforts to improve the quality of midwifery services. This aligns with research indicating that the lack of training for midwives is identified as a barrier to neonatal resuscitation performance [8].

The data from this study shows that the majority of midwives in the midwive private practices working area of Mojosari Health Center have a Bachelor's degree in Midwifery, accounting for 66.67%. The quality of midwifery services can be improved through the promotion and development of education, labor force management, regulations, midwifery service standards, and policy-making [9]. Supported by WHO [10,11], which explains that midwifery education according to international standards is key to improving service quality and plays a role in reducing maternal and infant mortality. Thus, quality midwifery education is crucial for sustainable development in addressing maternal and infant mortality challenges globally.

According to this research, the experience of midwives in the midwive private practices working area of Mojosari Health Center shows that 33.33% have 16-20 years of experience, 50% have 26-30 years of experience, and 16.67% have over 36 years of experience. The performance of midwives in providing services is influenced by their abilities, skills, family background, and work experience. However, this statement contradicts other research, which mentions that there is no relationship between the quality of service and a midwife's work experience in providing care [12].

In the midwive private practices working area of Mojosari Health Center, at least one newborn baby is handled each month, with a percentage of 33.33%, while the highest number is six babies, accounting for 16.67%. Midwives handle the most newborns, ranging from 1-2 babies per month. Emergencies can happen anytime and anywhere. Midwives, as healthcare professionals with authority to serve the community's health, must be able to make the right decisions in any situations. Thus, a midwife's experience in providing interventions to clients significantly affects the accuracy of decision-making. Other studies indicate that midwives with extensive experience in assisting deliveries do not necessarily have the skills required for neonatal resuscitation [13].

The majority of midwives in midwive private practices have adequate resuscitation knowledge, accounting for 66.67%, while a small percentage have insufficient knowledge, amounting to 33.33%. A midwife's knowledge and skills affect clinical decision-making when providing health interventions [14]. Other research suggests that insufficient knowledge of neonatal resuscitation among midwives contributes to the global neonatal mortality rate [13].

The research results indicate that midwive private practices midwives in the Mojosari Health Center working area have not had resuscitation experience in the past year. This is related to the decreasing number of deliveries at the midwifery practice due to all the babies born at the midwive private practices not experiencing asphyxia, and thus not requiring neonatal resuscitation. The results of interventions performed in the first few minutes of life directly affect an individual's quality of life. A midwife's good knowledge and experience in performing resuscitation are effective in reducing neonatal mortality [14]. Although midwives have not had resuscitation experience in the past year, this study cannot generalize that midwives lack quality, as the time frame used is too short.

Midwive private practices facilities have not yet provided resuscitation equipment that meets the standards set by the Ministry of Health Regulation No. 43 of 2019. A small percentage of midwive private practice facilities do not have blood sugar meters and the Newborn Bag & Mask, at 16.67%, and the majority do not have epinephrine, at 83.33%. One factor contributing to the incomplete resuscitation equipment in midwive private practice facilities in the Mojosari Health Center working area is the absence of midwive private practices members in the Bidan Delima program. Bidan Delima is

a program developed by the Indonesian Midwives Association (IBI) for certification of midwifery private practices. Every newborn is entitled to receive adequate and appropriate care. This right can be fulfilled with sufficient equipment and trained healthcare personnel [15]. This is supported by a study conducted by Eyeberu A [16] in Africa, which found that the lack of trained healthcare personnel and unavailable resuscitation equipment in healthcare facilities led to asphyxia being the leading cause of neonatal death in that country

5. Conclusion

The general characteristics of midwives in the working area of the Mojosari Community Health Center, Mojokerto, show that most are around 40 years old. All midwives have undergone APN training, and most hold a bachelor's degree in midwifery. The youngest has 16 years of experience as a midwife, while the oldest is 55 years old. The majority of midwives handle 1-2 newborns per month, with the highest number of babies handled in one month being six. The knowledge of neonatal resuscitation among midwive private practice in the Mojosari Health Center working area, Mojokerto is sufficient, and the midwives have not had any experience with neonatal resuscitation in the last year due to the absence of asphyxiated babies. The health facilities providing resuscitation services by midwive private practice in the Mojosari Community Health Center working area, Mojokerto, do not yet meet the standards outlined in Ministry of Health Regulation No. 43 of 2019. Efforts must be made to complete neonatal resuscitation equipment and enhance midwives' knowledge as a preventive measure against morbidity and mortality caused by unexpected asphyxia.

Compliance with ethical standards

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Disclosure of conflict of interest

The research conducted in this location may yield different results compared to other areas. Therefore, the findings of this study cannot be fully generalized or applied universally.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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