

## Knowledge and attitudes of midwives significantly influence the implementation of early initiation of breastfeeding

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### ABSTRACT

Early Initiation of Breastfeeding is a critical neonatal intervention proven to reduce morbidity and mortality during the first days of life. Despite national efforts to increase Early Initiation of Breastfeeding coverage, implementation remains inconsistent across health facilities, particularly at the primary care level. Midwives play a central role in facilitating Early Initiation of Breastfeeding; therefore, their knowledge and attitudes are essential determinants of successful practice. This study aims to analyze the relationship between midwives' knowledge and attitudes and their implementation of Early Initiation of Breastfeeding in community health centers in Manggarai Regency. This analytical observational study employed a cross-sectional design involving all 46 midwives working in community health centers across Manggarai Regency. Total population sampling was used. Data were collected through structured questionnaires measuring knowledge, attitudes, and Early Initiation of Breastfeeding implementation. Descriptive and bivariate analyses were conducted using the Chi-square test. The majority of respondents demonstrated fair knowledge (60.86%) and positive attitudes (81.6%). Early Initiation of Breastfeeding implementation was higher among midwives with good knowledge (72.3%) and positive attitudes (81.6%). Statistical analysis showed significant associations between knowledge and Early Initiation of Breastfeeding implementation ( $p = 0.015$ ) and between attitude and Early Initiation of Breastfeeding implementation ( $p = 0.021$ ). These findings indicate that both cognitive and affective factors strongly influence midwives' adherence to Early Initiation of Breastfeeding procedures. In conclusion, midwives' knowledge and attitudes are significantly associated with the implementation of Early Initiation of Breastfeeding. Strengthening professional competence through continuous training, supportive supervision, and improved facility readiness is essential to enhance Early Initiation of Breastfeeding coverage and contribute to reducing neonatal mortality.

**Keywords:** Early Initiation of Breastfeeding; midwives; knowledge; attitude; neonatal care

### INTRODUCTION

Newborns undergo several critical developmental phases, one of which is the neonatal period, a stage widely recognized as the most vulnerable in early human life [1-3]. A substantial proportion of infant deaths occur during this neonatal window, largely due to preventable complications that remain untreated. The absence of timely and adequate medical intervention for neonatal problems often results in lifelong disabilities. According to global reports [4], the under-five mortality rate has declined by nearly 60%, reaching 38 deaths per 1,000 live births in 2019; an extraordinary reduction compared to the early 1990s. Despite this progress, approximately 5.2 million infants still die before reaching the age of five, with nearly half of these deaths; around 2.4 million occurring during the neonatal period. Alarming, most of these deaths are attributable to causes that are entirely preventable.

Globally, the highest infant mortality rates are found in sub-Saharan Africa, with an estimated 76 deaths per 1,000 live births in 2019, a figure twenty times higher than the under-five mortality rate in Australia and New Zealand. Combined neonatal deaths in sub-Saharan Africa and South Asia account for 80% of global neonatal mortality, with 42% occurring in sub-Saharan Africa and 37% in South Asia. Although under-five mortality has declined significantly, disparities between high-income and low-income countries remain stark. National data reported to the Indonesian Ministry of Family Health indicate that 69% of under-five deaths; equivalent to 20,244 of 29,322 cases in 2019 occurred during the neonatal period. Of these, 80% (16,156 deaths) took place within the first six days of life. Meanwhile, 6,151 deaths (21%) occurred between 29 days and 11 months, and 2,927 deaths (10%) occurred between 12 and 59 months [5].

Further evidence [6] shows that Indonesia's neonatal mortality rate stands at 15 per 1,000 live births. The government aims to reduce this figure to 10 per 1,000 live births through targeted interventions, one of which is the first neonatal visit (CN1). This visit includes essential newborn care, promotion of exclusive breastfeeding, administration of vitamin K1, and hepatitis B0 vaccination (if not previously given). These interventions are considered highly cost-effective because they significantly reduce morbidity, disability, and mortality associated with vaccine-preventable diseases [5].

Early Initiation of Breastfeeding is a critical intervention that involves placing the newborn on the mother's abdomen immediately after birth, allowing the infant to locate the nipple and begin suckling within the first hour of life. Early breastfeeding supports the development of antibodies essential for survival and protects infants from common childhood illnesses such as diarrhea and pneumonia. WHO and UNICEF recommend Early Initiation of Breastfeeding as a life-saving measure, noting that Early Initiation of Breastfeeding can prevent up to 22% of neonatal deaths before 28 days of life. Early Initiation of Breastfeeding requires placing the newborn prone on the mother's chest or abdomen to ensure skin-to-skin contact for at least one hour immediately after birth [7].

Early Initiation of Breastfeeding plays a significant role in achieving Sustainable Development Goals (SDGs), particularly Goal 3, which aims to reduce neonatal mortality to 12 per 1,000 live births. Evidence also suggests that breastfed children demonstrate better cognitive outcomes, lower risks of obesity, and reduced likelihood of developing diabetes later in life. Increasing global breastfeeding rates could save more than 820,000 children under five and prevent over 20,000 cases of breast cancer annually [4].

Colostrum, the first stage of breast milk, is slightly yellowish and contains antibody concentrations 10 to 17 times higher than mature breast milk. It protects infants from allergens and infections before they receive complete basic immunization. WHO reports that colostrum feeding can reduce neonatal mortality by 22% due to its immunological benefits. Additional WHO data indicate that 170 million children are malnourished and up to 3 million die daily from infections such as respiratory illnesses, diarrhea, and measles; conditions that could be prevented through colostrum feeding. Malnutrition contributes to approximately 45% of all infant deaths globally. Despite misconceptions among some families that colostrum is "stale" or unsuitable for infants, colostrum contains IgA concentrations up to 5000 mg/dL, sufficient to coat the infant's gastrointestinal tract and protect against pathogens [8].

Riskesdas 2018 [9] reported that Early Initiation of Breastfeeding coverage increased to 58.2% from 34.5% previously [8], while exclusive breastfeeding prevalence remained low at 37.3%. In 2019, the Ministry of Health targeted Early Initiation of Breastfeeding coverage of 50% and exclusive breastfeeding coverage of 80%. However, the gap between Early Initiation of Breastfeeding and exclusive breastfeeding coverage continues to widen. Low Early Initiation of Breastfeeding coverage contributes to low exclusive breastfeeding rates and increases the incidence of diarrhea, respiratory infections, growth disorders, and undernutrition, ultimately elevating under-five mortality.

Data from the Ministry of Health's 2018 report on breastfeeding as the foundation of life show that 73.06% of newborns underwent Early Initiation of Breastfeeding in 2017, below the national target of 80%. Indonesia ranks ninth globally for the highest burden of malnutrition. Forty out of every 1,000 children die before age five, with one-third of deaths occurring in the first month of life and 80% within the first week. According to [9], nearly 3 in 10 children under five are stunted, 1 in 10 are underweight, and 1 in 5 primary school children are overweight or obese.

Exclusive breastfeeding for six months, followed by continued breastfeeding up to two years, can reduce under-five mortality by approximately 13%. Around 16% of neonatal deaths can be prevented if infants are breastfed from the first day of life, and breastfeeding within the first hour reduces mortality risk by 22%. Despite these benefits, exclusive breastfeeding coverage in Indonesia remains inconsistent and tends to decline. Although the Ministry of Health targets 80% exclusive breastfeeding coverage, actual coverage remains low at 74.5% [9].

Several factors influence Early Initiation of Breastfeeding implementation, including the willingness and competence of healthcare workers. Some providers do not follow established Early Initiation of Breastfeeding procedures, rarely performing skin-to-skin contact or breast crawl, and instead clean, swaddle, and hand the baby to the mother immediately [10]. Additional barriers include complications during delivery, provider fear of adverse events, and limited prioritization of Early Initiation of Breastfeeding [11-13]. Cultural beliefs, limited knowledge, inadequate medical support, and insufficient program advocacy also hinder Early Initiation of Breastfeeding implementation. Qualitative studies reveal that provider knowledge, motivation, supervisory support, and availability of informational media significantly affect Early Initiation of Breastfeeding performance [14-20].

Delayed Early Initiation of Breastfeeding is associated with increased morbidity during the first six months of life, underscoring the need to prioritize Early Initiation of Breastfeeding, exclusive breastfeeding for six months, and continued breastfeeding until two years to improve child health outcomes [21-23]. Early Initiation of Breastfeeding enhances maternal confidence in exclusive breastfeeding and promotes infant comfort through skin-to-skin contact [24-26].

The aim of this study is to identify and analyze the relationship between midwives' knowledge and attitudes and their implementation of Early Initiation of Breastfeeding in community health centers in Manggarai Regency. Specifically, the study seeks to determine whether varying levels of knowledge and differing attitudinal dispositions among midwives are significantly associated with the successful practice of Early Initiation of Breastfeeding, a critical neonatal intervention known to reduce early infant morbidity and mortality. By examining these relationships, the study intends to generate empirical evidence that can inform strategies for strengthening midwives' competencies, improving the quality of maternal and neonatal care, and increasing Early Initiation of Breastfeeding coverage as part of national efforts to reduce neonatal mortality.

## **METHODS**

### **Study period and research setting**

This study was conducted within the public health service network of Manggarai Regency, East Nusa Tenggara, Indonesia. The research took place across several community health centers located in the district, where midwives provide maternal and neonatal care as part of routine primary health services. The data collection period was carried out within a defined cross-sectional timeframe, allowing the researchers to capture information from all eligible respondents at a single point in time [27-29].

### **Study design and type of research**

The study employed an analytical observational design using a cross-sectional approach. This design was selected to examine the relationship between independent variables and the dependent variable by observing all variables simultaneously without manipulating the study environment [27-29]. As an observational analytic study, it aimed to identify statistical associations rather than causal effects [30], making it suitable for assessing behavioral, organizational, or service-related factors among midwives in the community health center setting.

### **Population and sample**

The target population consisted of all midwives working in community health centers across Manggarai Regency, totaling 46 individuals. Given the relatively small population size and the feasibility of accessing all midwives, the study adopted a total population sampling strategy, in which every member of the population was included as a respondent [31,32]. This approach ensured comprehensive coverage and minimized sampling bias, thereby increasing the representativeness of the findings for midwives in the district.

### **Study variables and operational definitions**

The study involved both independent and dependent variables. The independent variables represented factors hypothesized to be associated with the dependent variable, while the dependent variable reflected the primary outcome of interest. Each variable was operationally defined prior to data collection to ensure clarity and consistency in measurement. The operational definitions were translated into structured questionnaire items administered to all respondents.

### **Measurement of Variables**

Data for all variables were collected using a standardized questionnaire designed to capture demographic characteristics, professional practices, and other relevant indicators. Respondents completed the questionnaire independently. Each variable was measured using categorical or ordinal scales appropriate for Chi-square analysis. The questionnaire items were reviewed for clarity and consistency before administration to ensure that all midwives interpreted the questions uniformly.

### **Data processing and statistical analysis**

All completed questionnaires were checked for completeness and coded prior to data entry. The data were processed using SPSS for Windows, where descriptive and inferential (bivariate) analyses were performed. Descriptive analysis was used to describe the distribution of each variable,

including frequencies and percentages [33-35]. Bivariate analysis employed the Chi-square test to determine whether statistically significant associations existed between the independent variables and the dependent variable [36]. The Chi-square test results were interpreted using a significance level of  $p < 0.05$ .

## RESULTS

### Relationship between knowledge and the implementation of Early Initiation of Breastfeeding

Based on Table 1, the findings indicate that among the 18 respondents with good knowledge, a substantial proportion (72.3%) successfully implemented Early Initiation of Breastfeeding. Meanwhile, 27.7% with good knowledge did not implement Early Initiation of Breastfeeding. This pattern suggests that higher knowledge levels are associated with better adherence to Early Initiation of Breastfeeding procedures. Among the 28 respondents categorized as having fair knowledge, 17 midwives (60.7%) implemented Early Initiation of Breastfeeding, whereas 11 midwives (39.3%) did not. Although the proportion of Early Initiation of Breastfeeding implementation remains relatively high in this group, it is noticeably lower compared to those with good knowledge.

Table 1. Relationship between knowledge and the implementation of Early Initiation of Breastfeeding

| Knowledge level | Early Initiation of Breastfeeding |            |           |            | Total     |            | p-value |
|-----------------|-----------------------------------|------------|-----------|------------|-----------|------------|---------|
|                 | Yes                               |            | No        |            |           |            |         |
|                 | Frequency                         | Percentage | Frequency | Percentage | Frequency | Percentage |         |
| Good            | 13                                | 72.3       | 5         | 27.7       | 18        | 100        | 0.015   |
| Fair            | 17                                | 60.7       | 11        | 39.3       | 28        | 100        |         |

The Chi-square test yielded a p-value of 0.015, which is below the significance threshold of 0.05. This indicates a statistically significant relationship between knowledge level and Early Initiation of Breastfeeding implementation. In other words, midwives with higher knowledge are more likely to perform Early Initiation of Breastfeeding correctly. These results reinforce the importance of strengthening knowledge through continuous professional development, structured training, and updated clinical guidelines to ensure optimal neonatal care practices.

### Relationship between attitude and the implementation of Early Initiation of Breastfeeding

Based on Table 2, the results demonstrate a strong association between midwives' attitudes and their implementation of Early Initiation of Breastfeeding. Among the 38 respondents with a positive attitude, 81.6% implemented Early Initiation of Breastfeeding, while only 18.4% did not. This high proportion reflects that positive attitudes; such as confidence, motivation, and commitment to neonatal care substantially influence adherence to Early Initiation of Breastfeeding procedures. In contrast, all 8 respondents with a negative attitude (100%) did not implement Early Initiation of Breastfeeding. This complete absence of Early Initiation of Breastfeeding practice among midwives with negative attitudes highlights the critical role of psychological readiness, professional motivation, and perceived importance of Early Initiation of Breastfeeding in determining actual clinical behavior.

Table 2. Relationship between knowledge and the implementation of Early Initiation of Breastfeeding

| Attitude | Early Initiation of Breastfeeding |            |           |            | Total     |            | p-value |
|----------|-----------------------------------|------------|-----------|------------|-----------|------------|---------|
|          | Yes                               |            | No        |            |           |            |         |
|          | Frequency                         | Percentage | Frequency | Percentage | Frequency | Percentage |         |
| Positive | 31                                | 81.6       | 7         | 18.4       | 38        | 100        | 0.021   |
| Negative | 0                                 | 0          | 8         | 100        | 8         | 100        |         |

The Chi-square analysis produced a p-value of 0.021, indicating a statistically significant relationship between attitude and Early Initiation of Breastfeeding implementation. This suggests that attitude is a decisive factor influencing whether Early Initiation of Breastfeeding is carried out. Negative attitudes may stem from fear of complications, lack of confidence, insufficient training, or perceived workload, all of which can hinder proper Early Initiation of Breastfeeding practice. These findings emphasize the need for interventions aimed at improving midwives' attitudes, such as supportive supervision, motivational programs, continuous education, and reinforcement of Early Initiation of Breastfeeding benefits. Strengthening both knowledge and attitude is essential to ensure consistent and high-quality Early Initiation of Breastfeeding implementation across health facilities.

## DISCUSSION

### Midwives' knowledge in the implementation of Early Initiation of Breastfeeding

The findings of this study demonstrate that among the 46 participating midwives, the majority possessed a fair level of knowledge, accounting for 60.86%, and most within this category implemented Early Initiation of Breastfeeding (60.7%). The chi-square test yielded a p-value of 0.015, which is below the significance threshold of  $\alpha = 0.05$ , indicating a statistically significant association between midwives' knowledge levels and their implementation of Early Initiation of Breastfeeding. This suggests that knowledge plays a crucial role in determining whether midwives adhere to recommended Early Initiation of Breastfeeding practices.

Midwives' knowledge is shaped by both internal and external factors. Internal factors include cognitive ability, emotional stability, and educational background [37]. Higher educational attainment is strongly associated with better comprehension of clinical guidelines and improved decision-making capacity. External factors encompass sociocultural environments, workplace norms, and professional interactions [38]. For instance, midwives working in communities with higher educational levels tend to demonstrate stronger knowledge compared to those in settings where the general population has lower educational attainment.

These findings align with statement that knowledge or the cognitive domain is a fundamental determinant of human behavior [39]. According to Lawrence Green's behavioral theory, knowledge is a predisposing factor that shapes an individual's likelihood of performing a particular health behavior. Thus, inadequate knowledge may lead to inconsistent or infrequent implementation of Early Initiation of Breastfeeding, whereas adequate knowledge increases the likelihood of proper Early Initiation of Breastfeeding practice [40-47].

Knowledge acquisition does not solely occur through formal education; it is also shaped by professional training, workshops, and hands-on experience [48-50]. The researcher assumes that even when midwives possess adequate theoretical knowledge, Early Initiation of Breastfeeding implementation may still be hindered by contextual barriers within the community health centers environment. These barriers may include limited resources, high workload, inadequate staffing, or lack of institutional support.

This interpretation is supported by prior research which found that midwives with limited experience; particularly those who had worked for less than three years tended to have lower knowledge regarding Early Initiation of Breastfeeding [51]. Experience plays a pivotal role in strengthening clinical competence; the longer a midwife works, the more exposure she gains to diverse cases, thereby enhancing her knowledge and confidence in performing Early Initiation of Breastfeeding.

Furthermore, Early Initiation of Breastfeeding remains a relatively unfamiliar concept among some communities and even among certain healthcare providers [52]. Therefore, midwives are encouraged to proactively seek updated information, participate in continuing education, and engage in peer learning to strengthen their understanding of Early Initiation of Breastfeeding. Enhanced knowledge will enable midwives to better support mothers in initiating breastfeeding immediately after birth, thereby improving neonatal outcomes.

### **Midwives' attitudes in the implementation of Early Initiation of Breastfeeding**

The analysis revealed that 81.6% respondents exhibited a positive attitude, and among them, 67.9% successfully implemented respondents. Attitude is conceptualized as an internal response or predisposition toward a stimulus, shaped by personal experiences, cultural influences, interpersonal relationships, media exposure, educational institutions, and emotional factors.

However, the findings of this study diverge from prior research that the success of respondents is strongly influenced by the attitudes and behaviors of healthcare providers; particularly midwives, nurses, and physicians who assist mothers during childbirth [53]. Positive attitudes grounded in adequate knowledge significantly enhance Early Initiation of Breastfeeding implementation. In this study, although most midwives exhibited positive attitudes, not all translated these attitudes into consistent Early Initiation of Breastfeeding practice.

A midwife's attitude toward Early Initiation of Breastfeeding reflects her willingness to respond to the stimulus (Early Initiation of Breastfeeding guidelines) and her readiness to act. Attitude represents a predisposition rather than an actual behavior; thus, a positive attitude does not automatically guarantee action. Attitudes are shaped by personal experiences, observations of colleagues, and perceived norms within the workplace. These accumulated experiences form a behavioral tendency that may manifest as either positive or negative actions.

The relationship between attitude and behavior is grounded in the assumption that beliefs and emotions strongly influence actions. Individuals tend to behave consistently with their internal beliefs and feelings, forming stable attitudes. However, positive attitudes toward health values do not always translate into actual practice, especially when external barriers exist.

This interpretation is supported by prior research who found that midwives are more likely to facilitate Early Initiation of Breastfeeding when they possess both adequate knowledge and positive attitudes [54]. Conversely, other research reported that midwives often have varying interpretations of Early Initiation of Breastfeeding procedures because the program is relatively new [55], leading to uncertainty and difficulty in implementation. Time constraints, competing responsibilities, and impatience during the Early Initiation of Breastfeeding process further contribute to Early Initiation of Breastfeeding failure.

### **Strengths and limitations of the study**

This study possesses several notable strengths that enhance the credibility and relevance of its findings. By employing a total population sampling approach, the research successfully included all midwives working in the community health centers across Manggarai Regency, ensuring that the data accurately represent the entire population of interest [56-59]. This comprehensive inclusion minimizes sampling bias [60-62] and strengthens the generalizability of the findings within the local context [63,64]. Furthermore, the use of a validated analytical method; the Chi-square test provides a robust statistical foundation for identifying meaningful associations between knowledge, attitudes, and the implementation of Early Initiation of Breastfeeding. The study also benefits from its focus on frontline maternal health providers, whose practices directly influence neonatal outcomes. Integrating established behavioral theories, such as those proposed by Lawrence Green, enriches the interpretation of results and situates the findings within a broader theoretical framework, thereby enhancing the depth of the discussion.

Despite these strengths, the study is not without limitations. The cross-sectional design restricts the ability to infer causality [65-68], as the relationships observed represent only a single point in time and cannot determine whether knowledge or attitude directly leads to improved Early Initiation of Breastfeeding implementation. Additionally, the reliance on self-reported data introduces the possibility of social desirability bias [69], where respondents may overstate positive behaviors or underreport challenges. The geographic scope of the study, limited to one regency, may also constrain the applicability of the findings to other regions with different health system structures, cultural norms, or resource availability. Moreover, the study does not account for contextual factors such as workload, facility readiness, leadership support, or availability of training, all of which may significantly influence midwives' ability to perform Early Initiation of Breastfeeding. The absence of qualitative data further limits the exploration of midwives' personal experiences, motivations, and perceived barriers, which could have provided richer insights into the complexities of Early Initiation of Breastfeeding implementation.

### **CONCLUSION**

The study reveals that both knowledge and attitude play essential roles in shaping midwives' implementation of Early Initiation of Breastfeeding. Midwives with higher levels of knowledge and more positive attitudes are more likely to carry out Early Initiation of Breastfeeding effectively, although external constraints within the healthcare environment may hinder optimal practice. These findings underscore the importance of continuous professional development, supportive supervision, and improved facility conditions to strengthen Early Initiation of Breastfeeding implementation. Ultimately, enhancing both cognitive and affective components among midwives, while simultaneously addressing systemic barriers, is crucial for ensuring that Early Initiation of Breastfeeding becomes a consistent and sustainable practice capable of improving neonatal health outcomes.

## Ethical consideration, competing interest and source of funding

- This study was carried out in strict accordance with recognized ethical standards throughout its implementation.
- The research process was entirely free from any form of conflict of interest on the part of the author.
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