

Knowledge, attitude, and behavior of pregnant women on early initiation of breastfeeding

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Abstract

Background Infant mortality rate is an indicator of the degree of health in society. In Indonesia, the infant mortality rate remains high, with most deaths occurring in the first 24 hours of life. Breastfeeding has been shown to reduce infant mortality, especially if undertaken in the first hour of life. This practice is known as early initiation of breastfeeding (EIB). According to various studies, EIB implementation may be influenced by many factors such as knowledge, attitude, behavior, and health care facilities.

Objective To assess the level of knowledge, attitude, and behavior of pregnant women towards EIB.

Methods We conducted a descriptive study using questionnaires on 74 pregnant women in the outpatient clinic of Obstetrics and Gynecology Department, Dustira Hospital, Cimahi, West Java, Indonesia from November to December 2012.

Results Out of 74 respondents, 21% had a good level of knowledge on EIB, 23% had an adequate knowledge, and 56% had less than adequate knowledge on EIB. A positive attitude towards EIB was found in 65% of the respondents, while 35% had a negative attitude. With regards to behavior conducive to EIB, 8% of respondents had good behavior, 57% had moderate behavior, and 35% had less than adequate behavior.

Conclusion Majority of pregnant women have less than adequate knowledge on EIB, a positive attitude towards EIB, and moderate to less than adequate behavior conducive to EIB.

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Keywords: *early initiation of breastfeeding, knowledge, attitude, behavior*

Infant mortality rate (IMR) is one indicator of health status that is sensitive enough to explain the degree of public health in society.¹ The Indonesia Ministry of Health states that 17 babies die every hour in Indonesia.² Based on data from the WHO in 2011, IMR in Indonesia is about 25 per 1,000 live births (LB), which is high compared to other ASEAN countries such as the Philippines with 20 per 1,000 LB, Malaysia with 6 per 1,000 LB, and Singapore with 2 per 1000 LB.³

One hundred thirty million babies are born worldwide every year, and about 4 million of these die by the age of 4 weeks. Approximately 30% of these neonates die in the first week of life, but they have a high risk of dying on the first day of life.⁴ The neonatal mortality rate is highest in sub-Saharan Africa, followed by Asia and the Latin America.⁵ The main causes of neonatal death are asphyxia (23%), preterm delivery (28%), and severe infections (36%), including diarrhea (3%) and neonatal tetanus (7%).⁴

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One effort to reduce infant mortality is by breastfeeding. A study on the effect of breastfeeding on the most common cause of neonatal mortality showed that breastfeeding reduced the incidence of diarrhea and respiratory infection.⁶ In addition, a Ghana study showed that 26% of infant deaths could be avoided if all infants were breastfed from the first day of birth, and 22% if breastfeeding began at the first hour of birth.⁷ Breast milk includes the immune factors secretory immunoglobulin A (IgA) and lactoferrin, as well as K-casein, oligosaccharides, growth factors, and intestinal tract enzymes. These factors prevent the growth of pathogenic bacteria, and increase intestinal resistance to infectious agents.⁸

The WHO classified the implementation of EIB into four categories: poor (0-29%), fair (30-49%), good (50-89%), and very good (90-100%).⁹ Implementation of EIB varies around the world, with 17% in European and Central Asian countries and 33% in Asia Pacific.¹⁰ Countries included in the category of very good in implementation of EIB were Russia (99%), Norway (98%), Denmark (95%), and Poland (90%).¹¹ In Indonesia, EIB was launched in 2007, and since 2008 is included in the last step of normal delivery care (NDC).¹² Since 2010, EIB has also been included as the 4th in 10 steps to successful breastfeeding.¹³

A 2011 study showed that EIB implementation in Dustira Hospital, West Java, Indonesia was quite good, although not all mothers participated. Of 305 normal deliveries in 2011 at Dustira Hospital, 57% implemented EIB (174 mothers), with a success rate of 91.8%.¹⁴ That study did not examine the knowledge level, attitude, and behavior of respondents, although it has been shown that implementation of EIB is influenced by several factors such as the mother's knowledge of EIB and adequate health care facilities. Nonetheless, other factors may decrease the implementation of EIB, such as infant hypothermia, maternal postpartum fatigue, and the health workers' lack of understanding on the implementation of EIB.⁹ Social, economic, and educational factors also influenced the implementation of EIB.¹¹ According to a qualitative study in 2010, predisposing factors for breastfeeding failure include the lack of knowledge and experience of mothers.¹⁵

The results of an 2009 analytical study in Semarang showed a significant correlation between

level of maternal knowledge and implementation of EIB.¹⁶ Similar results were reported in a 2009 analytical study in Demak.¹⁷ Furthermore, a 2012 descriptive study in Medan showed that 20.5% of respondents had good knowledge and 71.7% had adequate knowledge about EIB. About 97.6% of the mothers had a positive attitude.¹⁸

Based on the studies mentioned, we conducted a study to assess the level of knowledge, attitude, and maternal behavior on implementation of EIB. The study was conducted at the Dustira Hospital, Cimahi, West Java, Indonesia. Our hospital has been implementing EIB since 2009, but to date, no study has been done to evaluate the above-mentioned variables. We hope that the results of this study will be useful for promoting and enhancing EIB implementation and the reduction of infant mortality.

Methods

We performed a descriptive study using questionnaires on knowledge, attitudes, and behavior towards EIB. The questionnaires were tested for validity and reliability. Subjects were pregnant women from the Outpatient Clinic, Obstetrics and Gynecology Department, Dustira Hospital, Cimahi, West Java, Indonesia from November to December 2012. Inclusion criteria were pregnant women who visited the outpatient clinic for pregnancy check-ups. We excluded pregnant women with poor communication skills or poor general condition. Definition of knowledge is familiarity, awareness, or understanding gained through experience or study. Assessment of level of knowledge based on a questionnaire scoring system. A good level of knowledge had a score more than 10, adequate had a score between 5 and 9, while less than adequate had a score of less than 4.

Attitude is the response of an individual or group to an action, environment, person, or stimulus with positive and negative result. A positive attitude shows acceptance, acknowledgement, approval, and implementation of the norms applied where the person live, and a negative attitude is the opposite of the positive attitude. The level of attitude assessed based on a questionnaire scoring system. A positive attitude had a score more than 7 and negative attitude had a less than 6 score.

Behavior is a form of individual responses or reactions to stimuli or environmental. The level of behavior assessed based on a questionnaire scoring system. A good level of behavior had a score more than 7, adequate had a score between 4 and 6 while less than adequate had a score of less than 3.

Results

Seventy four pregnant women participated in this study. Characteristics of the respondents can be seen in **Table 1**. Most respondents were between 15-29 years of age, that was equal to 56.7%, the majority of respondents completed high school education, while the rest are spread almost evenly in groups of junior high school, elementary school, or bachelor/diploma.

Questionnaires revealed that only 20 (27%) mothers knew the definition of EIB, 26 (35.1%) mothers knew the EIB execution time, and 23 (31.1%) mothers knew how to perform EIB. The questionnaire results on maternal knowledge of EIB are shown in **Table 2**.

Table 1. Characteristics of respondents

Characteristics	n	%
Age, years		
15 – 29	42	56.7
30 – 44	32	43.3
Education levels		
Elementary school	8	10.8
Junior high school	15	20.27
High school	38	51.3
Bachelor /diploma	13	17.5
Parity types		
Primigravidae	25	34
Multigravidae	49	66

The time spent for EIB was only known by 19 (25.7%) respondents. The reasons for doing EIB was only known by 27 (36.5%) respondents. The content of breast milk was known by 42 (56.8%) respondents. The time spent for EIB was only known by 19 (25.7%) respondents. However, respondents were not familiar with the term “first breast milk”, only 12 respondents (16,2%) who answered correctly. Meanwhile, when asked about the meaning of colostrum only known by 18 respondents (24.3%). The time for giving colostrum were known by 56 (75,7%) respondents. About 49 (66,2%) respondents knew the benefit of colostrum. Things to do when EIB does not happen after 1 hour was only known by 19 (25,7%) respondents. Benefits of EIB for infants were known by (66.2%) respondents and benefits for mothers were known by (40.5%) respondents.

Questionnaire scoring on EIB knowledge ranged from the lowest score of 0 to the highest score of 13, with an average score of 5. This score was in the adequate category. **Figure 1** shows that more than half

Table 2. The distribution of knowledge of EIB

Question types	Answers (n=74)	
	Correct n (%)	Incorrect n (%)
Meaning of the term EIB	20 (27)	54 (73)
Execution time of EIB	26 (35.1)	48 (64.9)
Procedure of EIB	23 (31.1)	51 (68.9)
Time spent for EIB	19 (25.7)	55 (74.3)
Reasons for doing EIB	27 (36.5)	47 (63.5)
Content of breast milk	42 (56.8)	32 (43.2)
Meaning of the term “first breast milk”	12 (16.2)	62 (83.8)
Meaning of the term “colostrum”	18 (24.3)	56 (75.7)
Timing of colostrum	56 (75.7)	18 (24.3)
Benefit of colostrum	49 (66.2)	25 (33.8)
What to do if EIB does not happen for 1 hour	19 (25.7)	55 (74.3)
Benefits of EIB for mothers	30 (40.5)	44 (59.5)
Benefits of EIB for infants	49 (66.2)	25 (33.8)

Table 3. The distribution of attitudes toward early initiation of breastfeeding

Statements	SA*	A*	D*	SD*
	n (%)	n (%)	n (%)	n (%)
I will do EIB immediately after birth	65 (87.8)	8 (10.8)	1 (1.4)	0 (0)
I will do EIB to provide the benefits of colostrum	54 (73.0)	16 (21.6)	4 (5.4)	0 (0)
I will not wait until fatigue is gone to do EIB	8 (10.8)	47 (63.5)	7 (9.5)	12 (16.2)
I will not give formula milk because breast milk is still dirty	8 (10.8)	60 (81.1)	3 (4.1)	3 (4.1)
I will do early lactation because milk could come out directly	10 (13.5)	55 (74.3)	7 (9.5)	2 (2.7)
I will do EIB, exclusive BF#, and continue BF for 2 years	20 (27.0)	50 (67.6)	2 (2.27)	2 (2.7)

*SA: strongly agree, A: agree; D: disagree; SD: strongly disagree; #BF: breastfeeding

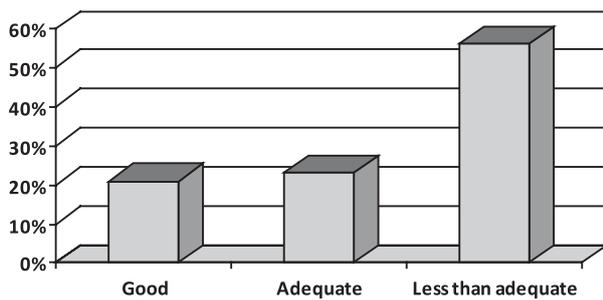


Figure 1. Maternal level of EIB knowledge

Hospital on the importance of EIB. During interviews, many respondents claimed that this was the first time they had heard the term “EIB,” but after describing its meaning, respondents claimed that they knew about the program but did not know the term.

Early initiation of breastfeeding is implemented immediately after the birth and initiated within the first hour of birth. Twenty-six respondents (35.1%) knew that EIB is implemented immediately after birth, but the majority (48%) did not know the importance

Table 4. The distribution of frequency of behavior responses towards EIB

Statements	Agree	Disagree	Already done
	n (%)	n (%)	n (%)
I will do EIB	60 (81.1)	1 (1.4)	13 (17.6)
I will give colostrum	58 (78.4)	3 (4.1)	13 (17.6)
I will not make a request for the midwife to assist EIB implementation	34 (45.9)	40 (54.1)	0 (0)
I will search for information about EIB	58 (78.4)	16 (21.6)	0 (0)
I will not ask the nurse to bath the baby first then help with breastfeeding	28 (37.8)	46 (62.2)	0 (0)

of responders (56%) were in the less than adequate level of EIB knowledge.

Regarding attitude toward EIB, the majority of respondents strongly agreed to implement EIB immediately after birth (87.8%) (Table 3).

A summary of mothers’ behavior towards EIB is shown in Table 4. Questionnaire scores on maternal behavior towards EIB ranged from a low score of 2 to a high score of 7, with an average score of 4, which was in the moderate category. Forty-two respondents (57%) were in the moderate behavior category for EIB implementation, while 35% were in the less than adequate category and 8% were in the good behavior category.

Discussion

Only 20 respondents were familiar with the term EIB (27%), while other respondents knew the meaning of EIB without knowing the term. However, respondents who answered incorrectly did not know the term or the meaning of EIB because for many of them this was their first pregnancy so they had minimal knowledge of breastfeeding. In contrast, a 2010 descriptive study in Adam Malik Hospital, Medan shows that 82.2% (74) of mothers knew the term “EIB.”¹⁹ This is due to the lack of consistent maternal education at Dustira

of EIB. Some respondents were also confused between the meaning of EIB and exclusive breastfeeding. This is due to lack of consistent education about EIB from the midwives or other health care workers.

The implementation of EIB should start shortly after the baby’s birth if he/she is in a good and dry condition, without removing the vernix. After the umbilical cord is cut and tied, the baby should be placed on the mother’s stomach, allowed to find the mother’s nipple and suck for up to 1 hour.²⁰ Correct implementation of EIB was known by only 23 respondents (31.1%), similar to mothers in Adam Malik Hospital (30%).¹⁹ Early initiation of breastfeeding should occur within the first hour after birth.²¹ However, only 19 respondents (25.7%) answered correctly that EIB should be performed within 1 hour of birth, while 55 respondents (74.3%) answered incorrectly. Again, lack of maternal education by the health care workers may be to blame.

The content of milk was known by 42 respondents (56.8%). Respondents claimed to know about the content of milk from TV ads and other mass media. Breast milk has superior content to formula, such as lactoferrin, oligosaccharide, casein, cytokines, growth factors, and various enzymes, which may increase infant immunity against disease.⁸

The term “first breast milk” (colostrums) was known by only 12 respondents (16.2%). Those who

knew the meaning of ‘colostrum’ amounted to 8 respondents (24.3%), in contrast to 61 respondents (75.3%) of a 2007 study in Secanggang Health Center.²² This difference maybe due to the lack of maternal education by health workers in Dustira Hospital. Although several television ads explain the term ‘colostrum’, mothers did not remember the term ‘colostrum’ as the first milk coming out.

Many respondents (75.7%) stated that the first milk coming out improved infant immunity, more than the 63% respondents at Adam Malik Hospital. Colostrum, as the first milk produced by mammary glands, is yellowish in color and secreted during the first 4 days of feeding. Colostrum is a source of fat, protein, carbohydrates, vitamins and minerals, and consists of protective factors such as secretory IgA.²³ A total of 19 respondents (25.7%) knew that if the baby was unable to find the mother’s nipple within 1 hour, they should place the baby’s head closer to the nipple. Maternal benefits of EIB, as stated by 30 respondents (40.5%), included accelerated milk production, as well as reduced postpartum bleeding and pain after delivery. Some respondents also answered that breastfeeding can reduce the risk of breast cancer and strengthen the psychological attachment between a mother and her infant. The 2010 Medan study reported that only 33% of pregnant women knew that EIB had many benefits for their babies.¹⁹ Infant suckling on the mother’s nipples stimulates the release of the hormone, oxytocin, which reduces postpartum bleeding, accelerates uterine size reduction, accelerates the removal of placenta, calms the mother into loving the baby more, increases the pain threshold and contracts the muscles around the breast to excrete milk.^{25, 26}

Our results on EIB level of knowledge differed from those in Medan (2011), in which 46.9% of respondents had adequate knowledge of EIB, while 34.3% had good knowledge, and 18.8% had less than adequate knowledge.²⁷ Also, a descriptive study in Surakarta (2012) showed that 57.1% of respondents had adequate knowledge, 17.2% had good knowledge and 25.7% had less than adequate knowledge.²⁸ Another Medan study in 2010 showed that 71.1% of respondents had an adequate level of knowledge about EIB.¹⁸ In Dustira Hospital, most mothers’ level of knowledge about EIB was in the less than adequate category, it

maybe due to such information has not been disseminated comprehensively, although the program has been in effect since 2009.

The majority of our respondents (87.8%) strongly agreed with implementing EIB immediately after birth. According to EIB theory, EIB cannot be done after Caesarean deliveries. However, EIB can be implemented after spinal or epidural anesthesia, as mothers can immediately respond to the baby with skin contact.³¹

Fifty-four respondents strongly agreed that implementing EIB is a way to give colostrum and 47 respondents agreed to immediately perform EIB despite fatigue. However, 12 respondents strongly disagreed, as they waited until they were no longer tired. Respondents stated that fatigue after childbirth would quickly be replaced by a sense of happiness after seeing their babies. Fifty-five respondents agreed with the statement that they could produce milk beginning at birth, believing the theory that postponing the suckling process could limit milk production within the first week. However, milk production can last for several years if the child continues to suckle, although the speed of milk formation will decrease after 7 to 9 months of breastfeeding.²⁵ In the last statement, 67.6% said they would give exclusive breastfeeding for 6 months and continue breastfeeding until the age of 2 years, along with complementary food.

A positive attitude towards the implementation of EIB was found in 48 (65%) respondents, lower than that of a study in Djoelham Binjai Hospital (2010) which found that 97.6% of respondents had a positive attitude towards the implementation of EIB.¹⁷ Positive maternal attitude should be developed through observing midwives or nurses as role models. Forty respondents said they would not ask for help from nurses to implement EIB.

The majority of respondents had moderate behavior on the implementation of EIB, amounting to 57% (42 respondents). Behavior is affected by knowledge and attitude but further study is needed.

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