

Original Research

## EFFECTIVENESS OF BREAST CRAWL BY MIDWIVES TO INCREASE BREAST MILK PRODUCTION AMONG POSTPARTUM MOTHERS

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### ABSTRACT

**Background:** Normal Childbirth Care or APN is a standard or a reference for childbirth assistance and a breast crawl, or called IMD, in Indonesia; however, there is lack of its implementation in the midwifery practice. Breast crawl is considered effective in increasing breast milk production among postpartum mothers.

**Objective:** The aim of the study was to determine the effectiveness of breast crawl by midwives to increase the breast milk production in postpartum mothers in Kendari, Indonesia.

**Methods:** True experimental study with posttest only control group design. A total of 30 midwives participated using a total sampling technique. Respondents were given intervention regarding the implementation of breast crawl using the breast crawl pocket book as a research instrument. Data were analyzed using Mann-Whitney test to determine the differences in respondents who were given IMD intervention using the breast crawl pocket book and the control group who did not use the breast crawl pocket book.

**Result:** There was a significant difference between respondents who were given intervention using pocket books and the control group who did not use pocket books with  $p = 0.039 (<0.05)$ .

**Conclusion:** There was a significant difference between the breast milk production of postpartum mothers who were given breast crawl intervention and those who were not given breast crawl intervention by midwives. This intervention is therefore recommended as one of midwifery cares in the community health centers.

**Keywords:** breast crawl, breast milk, midwifery, postpartum mothers

### BACKGROUND

Infants are children aged range 0 - 12 months. Infancy is the age in the first month of life. One of a nation's health indicator can be seen from the high and low of infant mortality ([Maryunani, 2013](#)). A press release from UNICEF explained that about 30 thousand infant deaths in Indonesia could be prevented through exclusive breast milk. An analysis explained that breast-feeding during

6 months can save 1.3 million lives around the world. The 2015 Indonesian Demographic and Health Survey (SDKI) showed that the infant mortality rate (IMR) are 22.23 deaths per 1,000 live births ([Ministry of Health Republic of Indonesia, 2015](#)).

Morbidity and infant mortality rates can be prevented by breast-feeding from birth, especially exclusive breast-feeding. This exclusive breast-

feeding can be conducted for at least 6 months from the baby's birth without the addition of weaning food (PASI). The great benefits of breast milk are in the infant growth and development. Breast milk contains substances that required by the baby. Breast milk consists of water, alpha-lactalbumin, lactose casein, amino acids, antibodies to germs, viruses, and fungi ([Saleha, 2009](#)).

There are several efforts that can be conducted by midwives to help increase milk production on the postpartum mothers. One way is by breast care and oxytocin massage ([Hesti, Pramono, Wahyuni, Widyawati, & Santoso, 2017](#)). The functioned hormone in the body in the production of breast milk is the hormone oxytocin. The smooth production of the hormone oxytocin stimulates the alveoli cells in the breast glands can contract properly. The occurrence of the contractions can make breast milk difficult to come out ([Kuswaningrum, Suwandono, Ariyanti, Hadisaputro, & Suhartono, 2017](#)).

Our survey conducted at the Community Health Center of Poasia or called Puskesmas Poasia showed that midwives implement a Normal Childbirth Care (APN) as a reference for childbirth assistance and breast crawl (IMD) techniques. But, out of the 20 childbirths, there were 13 postpartum mothers who practiced IMD and 7 did not practice IMD because there were limitations on the mother and baby to conduct IMD such as complications during child birth and emergencies in the fetus, and among the 20 mothers, only 10 mothers who produced breast milk existed since the first day.

## METHODS

### Study Design

This study employed a true experimental study with posttest only control group design, which is the measurement of two research groups and only one group is given treatment ([Creswell & Poth, 2016](#)).

### Setting and Participants

This study was conducted in the working area of the Poasia Puskesmas, Kendari City, Indonesia,

which was carried out in 2018. The sample of this study was 30 midwives who worked at the Poasia Puskesmas selected using a total sampling.

### Instrument and Intervention

The pocket book Breast Crawl (IMB) was used as an instrument in this study. In this method, respondents were given intervention regarding the implementation of Breast Crawl (IMD) based on the pocket book. Measurement of the effectiveness of breastmilk production through several indicators, including breastfeeding time, breast condition, frequency of urination per day, infant response, the sensation of frequency of bowel movements per day.

### Data Analysis

After intervention, data were analyzed using Mann-Whitney test to determine the differences in respondents who were given IMD intervention using the breast crawl (IMD) pocket book and the control group who did not use the breast crawl (IMD) pocket book.

### Ethical Consideration

This study has been approved by Poltekkes Kemenkes Kendari, Southeast Sulawesi, Indonesia. All participants have received appropriate informed consents.

## RESULTS

### Characteristics of the Study Participants

The majority of respondents' education was Midwifery DIII as many as 25 people (83.3%), while the Midwifery DIV was 5 people (16.7%). In addition, the majority of respondents aged 21-27 were 21 people (70%), followed by 5 people aged 27-34 years (16.7%), and 4 people aged 34 years and over (13.3%) (**Table 1**).

**Table 1** Distribution of Respondents based on Education and

Variable	Age	
	n	Percentage (%)
<b>Education</b>		
Midwifery DIII	25	83.3
Midwifery DIV	5	16.7
<b>Age</b>		
21-27	21	70
28-34	5	16.7
>34	4	13.2

### Implementation of the Breast Crawl (IMD) by Midwives

There were 11 respondents (73.3%) who experienced an increase in breast milk production quickly in the intervention group and 4 respondents (26.7%) who had a decrease in breast milk production. In the control group, there were 7 respondents (46.7%) who had an increase in breast milk production quickly and 8 respondents (53.3%) who had a decrease in breast milk production based on indicators of evaluation including breastfeeding time, breast condition, frequency of urination per day, infant response, the sensation of frequency of bowel movements per day (Table 2). Other than that, 15 respondents (50%) who were given IMD intervention through the IMD pocket book had an average of 18.8, and 15 people (50%) who were not given IMD intervention with the IMD pocket book had an average of 12.2 (Table 3).

**Table 2** Distribution of Increased Breast Milk Production by Intervention and Control Groups

Breast Milk Production	Quick		Late	
	n	%	n	%
Intervention	11	73.3	4	26.7
Control	7	46.7	8	53.3

**Table 3** Distribution of the Implementation of the Breast Crawl Technique (IMD) by Midwives in the Intervention and Control Groups

Breast Crawl (IMD)	n	%	Average
Intervention	15	50	18.8
Control	15	50	12.2

### Effectiveness of Breast Crawl by Midwives to Increase Breast Milk Production in the Intervention and Control Group

The result of the Mann-Whitney test showed that there was a significant difference between respondents who were given IMD intervention using pocket books and the control group who did not use pocket books with  $p = 0.039$  ( $<0.05$ ) (Table 4). The production of breast milk in the respondents who were given the intervention tends to be faster than the control group who was not given the intervention. The median difference between the two groups was 13, clinically there was a significant difference between the breast milk production of mothers who were intervened for IMD and those who were not intervened for IMD.

**Table 4** Distribution of Effectiveness of Breast Crawl by Midwives to Increase the Breast Milk Production in the Intervention and Control Group

Variable	n	Median (min-max)	p-value
Did IMD	15	60 (44-70)	0.039
Didn't do IMD	15	47 (41-67)	

Average of rank of IMD was 18.8; Average of rank of no IMD was 12.2

## DISCUSSION

According to [Kristiyanasari \(2009\)](#), breast milk production is heavily influenced by consumed food from mother, because the breast-making glands cannot work perfectly without adequate food. To produce adequate breast milk production, mother's food must need the amounts of calories, protein, fat, vitamins and adequate minerals. Moreover, the mother was also recommended to consume 8-12 glasses of water per day.

Food becomes one of the factors that can affect the adequate breast milk production for infants. Mothers who consumed the nutritious food during breast-feeding will produce good breast milk. Therefore, mothers need to pay attention the importance of adequate nutrition food during lactation ([Rahyana, 2017](#)).

In our study, there was a significant difference between respondents who were given IMD intervention using pocket books and the control group who did not use pocket books. For the respondents who were given the intervention, the production of breast milk tends to be faster than the control group who was not given the intervention. The median difference between the two groups was 13 and the mean ranking in the samples given IMD intervention was 18.8 and those who were not given the intervention of 12.2 with a mean difference of 6, clinically there was a significant difference between postpartum breast production of breastfeeding mothers who were given IMD intervention and not given IMD intervention.

According to [Widuri \(2013\)](#), there were several efforts for mothers to successfully breastfeed properly and smoothly since the breast-feeding process, one of ways was by breast-feeding as soon as possible after the baby was born, that was

begins with IMD and skin contact between mother and baby. Direct contact was needed to create satisfaction for either mother and baby. Infants feel safe and satisfied because they get warmth from their mother's arms. Mothers who feel relaxed and comfortable then the breast milk production will fast ([Wulandari & Handayani, 2011](#)). Reflex of the baby's sucking on the mother's nipples will stimulate breast milk supply. The earlier and more often the baby suckles, the breast milk will produce a lot more ([Nugroho, 2011](#)).

IMD is the process of allowing a baby with its own instincts to suckle immediately within the first hour after birth, along with contact of baby and mother's skin. IMD began with skin contact between mother and newborn infant and then with breast-feeding. The implementation of IMD gives mothers the opportunity 8 times more successful to provide exclusive breast-feeding for up to 4 or 6 months compared to the mothers who did not conduct IMD ([Fikawati & Syafiq, 2003](#)). IMD can also help mothers in breast-feeding which is the best alternative to prevent the provision of food and beverages. IMD is the first step that must be conducted by midwife immediately after the baby is born, the midwife's skills in managing IMD must be correct.

[Roesli \(2007\)](#) explained that IMD conducted within the first hour after the baby is born will train the baby to instinctively find his mother's nipples. Research reveals, if the infant can suckle in the first 20-30 minutes after birth, this will build a sucking reflex on the baby which stimulate nerve endings around the breast to the front pituitary gland at the base of the brain to produce the hormone prolactin. Prolactin will stimulate the breast to produce breast milk and can increase the breast milk production ([Verayanti, 2008](#)).

According to the Directorate General of Public Health Development, breast-feeding in the first 30 minutes of a newborn infant was only 8.3%, 4 - 36% in the first hour of a newborn infant, whereas only 3.7% on the first day of baby life who obtained breast milk ([Aprilia, 2009](#)), whereas on the second day there were differences in the production of breast milk in mothers who had IMD, causing that the baby slept longer, the

frequency of defecating the baby more often, the frequency of urination more frequently, the frequency of breast-feeding more often and the condition of empty breasts after breast-feeding infants ([Fitria, 2010](#)). This research is supported by a study on the 30 respondents that there were 21 respondents (70%) of mothers whose produce was fast. That is caused by the process of childbirth that has been carried out by IMD, besides that it was also due to suction reflexes which stimulate the release of breast milk. Whereas 9 respondents (30%) whose their breastmilk production was slow due to some mothers had not done IMD so there was lack of suction reflexes that stimulated breastmilk production ([Purwanti, 2010](#)).

## CONCLUSION

Implementation of Breast Crawl (IMD) effectively by midwives on the breast milk production for postpartum mothers with a mean ranking value in those given IMD intervention as 18.8 and those not given intervention as 12.2 with a mean difference of 6. Clinically, there was a significant difference between the breast milk production of postpartum mothers who were given IMD intervention through IMD pocket book and those who were not given IMD intervention. Therefore, the management of early breast-feeding initiation in health services should be done properly and correctly and according to established procedures. For mothers who will face childbirth is expected to work together with healthcare personnel in the management of early breast-feeding initiation. They also need to socialize the implementation of early breast-feeding initiation and exclusive breast-feeding through several information media (print and electronic). Further research needs to be conducted to refine the discussion and using of other interventions to stimulate the smoothness coming out of breast milk and breast-feeding initiation activities.

### Declaration of Conflicting Interest

The authors would like to declare that they have no conflict of interests in this study.

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