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**Difference Analysis of Weight and Occurrence of Fever,  
Diarrhea, Vomiting in Infants 0-2 Months Provided  
Modification Module of Early Breastfeeding Initiation  
compared Group Provided Standard Module in RSKDIA  
Fatimah and Puskesmas Bara-Baraya Makassar**

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**Abstract**

Early initiation of breastfeeding is the beginning process of mother secreting milk by contraction mioepithel cells that cause the release of milk from the lactiferous ducts. This practice is recommended within one hour after delivery, because at the age of first 20-30 minutes, baby sucking reflex is very strong that be the best time for baby to get colostrum. Colostrum plays a major role in development of the immune system and will suppress the proliferation of bacteria in neonates.

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This study was intended to examine differences in health problems commonly experienced by infants in the first months of his birth as fever, diarrhea, vomiting, seizures and also weight in infants given the early breastfeeding initiation modification module of standard modules that have been used over the years. This research used quasi-experimental, prospective longitudinal study approach, following the study subjects from the third trimester of pre-natal, intranatal, until 8 weeks postnatal with a large sample of 60 pregnant women and research sites in RSKDIA Sitti Fatima and Puskesmas Bara-Barayya, Makassar. Samples were divided into 2 groups of intervention provided training with early breastfeeding initiation modification module and the second group was given early breastfeeding initiation training with standard modules.

The results showed that pregnant women given modification module as an intervention group, all of them performed optimally early breastfeeding initiation, both in terms of implementation and nursing time while the mothers were given a standard module as a control group, the execution of early breastfeeding initiation was not optimal. Nevertheless, the data showed that either the intervention group or the control group had a healthy baby and until the age of 2 months had never experienced health problems commonly experienced in infants, such as fever, diarrhea and vomiting, but weight infants of mothers given modification module of early breastfeeding initiation is better than those only given standard module.

**Keywords:** Module; Early Initiation of Breastfeeding; Weight of Baby.

## **1. Introduction**

Giving early breastfeeding is suggested within one hour after delivery, because at the age of first 20-30 minutes, baby sucking reflex are very strong so it is the best time for babies learn to suck. Breastfeeding plays an important role in immune development of infants and colostrum obtained during early initiation of breastfeeding will suppress the proliferation of bacteria in neonates [1-5].

Through the early breastfeeding initiation, the stimulus to the baby's immune system is faster because baby gets colostrum containing immunoglobulin and high lymphocytes. It is only found in breast milk expenditure in the first stage [6,7]. Breast milk contains lacto-oxidase and neuraminic acids that have antibacterial properties against *E. coli* and *Staphylococcus* [8,9]. The complete component of breast milk like this should be realized by every mother, so they do not replace it with other components.

In Indonesia, the early breastfeeding initiation practice is still low, the proportion of breastfeeding practice within 30 minutes after delivery is only 8.3%, in 1 hour is 4-36%, and in one day only reached 27%. Meanwhile, the percentage of early breastfeeding initiation in 2010 only 29.3% increased by 5.2% to 34.5% in 2013 [10,11]. The percentage of early breastfeeding in the first 1-6 hours only 35.2%, while for the first 7-23 hours ranges 3.7% [12]. It gives an overview the low achievement of breastfeeding, which one of the cause is public awareness of the importance of breastfeeding still low.

Some studies indicated many failures of early breastfeeding initiation and breastfeeding are influenced by knowledge. Mothers who have education/educated, realize the advantages of early breastfeeding both physiologically and psychologically so they have 1-4 times greater chance of breastfeeding their babies in the

first hours of birth [13]. This is in line with research which has found that education, knowledge, attitudes, midwife actions and family support influence the practice of early breastfeeding initiation[15]. Therefore, the dissemination of knowledge about the early breastfeeding initiation need to be carried out continuously, not just limited to pregnant women, but also to the entire family. Correct knowledge about infant feeding method, the benefits of early breastfeeding initiation[15], the support that comes from health workers, address the issue of breastfeeding, correct lactation technique [17] and knowledge about breastfeeding odds with cultural beliefs [18]. One obstacle in the achievement of early breastfeeding initiation practice is lack of performance with active involvement of mothers, majority of pregnant women do not admit, know and understand why they should practice the early breastfeeding initiation. Another obstacle is the number of pregnant women who are not equipped with enough knowledge about the correct breastfeeding techniques, including the challenges faced by working mothers. In that regard so that pregnant women need to be equipped with a variety of information to support their success. So it need an education approach through training to improve the coverage of early breastfeeding initiation practice. It is known that the education approach is the most effective approach to improve the mother's knowledge, especially in the practice of early breastfeeding initiation. With a good knowledge, it is expected pregnant women become more concerned and carry out the practice of early breastfeeding initiation. This study was intended to examine differences in health problems commonly experienced by infants in the first months of their births as fever, diarrhea, vomiting, seizures and also weight in infants who mothers given modification module about early breastfeeding initiation that was obtained from standard modules that have been used over the years.

## **2. Materials and Methods**

### **2.1 Materials**

The design of this study was quasi experiment, a prospective longitudinal study approach, following the study subjects from the third trimester of prenatal, intranatal, up to 8 weeks postnatal. The population in this study was pregnant women who got antenatal care in RSKIAD Siti Fatima and Puskesmas Bara-Baraya Makassar, while the sample was pregnant women of 60 people with gestational age  $\pm 34$  weeks who met the inclusion criteria, normal delivery and carried out the practice of early breastfeeding initiation in RSKIAD Siti Fatima and Puskesmas Bara-baraya Makassar. Sampling method was consecutive justified sampling. The Interventions was an early breastfeeding initiation training using modification module referred to module package of early breastfeeding initiation and 6 months of exclusive breastfeeding (Collaborative Learning Activity Guide) published in 2008 by Indonesian Health Department. The modified material was material about the benefits and indications of early breastfeeding initiation.

### **2.2 Research Procedure**

To get a good model of the module, the modification module was tested to the 10 people in pregnant women in working area of Puskesmas Maccini, then module revised. The intervention was conducted in RSKDIA Siti Fatimah and Puskesmas Bara-baraya Makassar. Divided into 2 groups, namely intervention group who was given early breastfeeding initiation training and modification module, and the control group who was given

training and MCH's book. Before the intervention given, early screening of maternal health was done to adjust gestational age by physical examination and palpation of Leopold. Further intervention through training of early breastfeeding initiation and distribution of early breastfeeding initiation's module followed at birth to assess the implementation of the early breastfeeding initiation practice. The training was done 2 times respectively at the age of 34 and 36 weeks of pregnancy, so each subject received two training sessions. Long training sessions conducted over 60 minutes of each meeting. Beginning with the orientation phase for 5 minutes, giving the material and discussion for 45 minutes and closing session for 10 minutes.

### 3. Result

Data shown was the comparison between the group receiving intervention, which was given the modification module of early breastfeeding initiation and those which was given standard modules in accordance with the applicable program.

**Table 1:** Characteristics of Intervention and Control Group

Characteristics	Intervention Group (n=30)		Control group (n=30)		
	n	%	N	%	
Age	<20 years	2	6.7	4	13.3
	20-30 years	15	50.0	13	43.3
	31-40 years	13	43.3	12	40.0
	> 40 years	0	0	1	3.3
Baby Gender	Male	14	46.7	12	40.0
	Female	16	53.3	18	60.0
Ethnic	Makassar	16	43.3	10	33.3
	Bugis	11	36.7	11	36.7
	Toraja	1	3.3	7	23.3
	Jawa	1	3.3	1	3.3
	Timor/NTT	1	3.3	1	3.3
education	Elementary school	4	13.3	8	26.7
	Junior high school	4	13.3	10	33.3
	Senior high school	18	60.0	12	40.0
	College/Diploma	3	10.0	0	0

Table 1 show the characteristics of subjects, the frequency of intervention and control group of age were not different significantly and the age group that has the highest frequency was 20-30 years. Age group over 40 years, the frequency was very low and suggested that a more productive age are the subject of research.

The majority of the babies's sex was woman and ethnic majority was Bugis Makassar, with the majority of education level was senior high school.

**Table 2:** Infant Health Problems After Aged 2 Months

Table 2 showed that common health problems experienced by infants were not met either the intervention group or the control group from the age of 0 to 2 months.

**Table 4:** Distribution of Infant Health Problems Age 2 Months

Health problems (Age 0-2 months)	Intervention Group				Control Group				Total	
	Suffered		Never suffered		Suffered		Never suffered		N	%
	n	%	n	%	n	%	n	%	N	%
Fever	18	0.6	12	0.4	21	0.7	9	0.3	60	100
Diarrhea	19	0.63	11	0.36	18	0.6	12	0.4		
Vomiting	18	0.6	12	0.4	21	0.7	9	0.3		
Convulsion	0	0	30	100	0	0	30	100		

Source: Primary Data, 2015

**Table 3:** Difference Analysis of Mother and Baby's Weight on Intervention and Control Group

Characteristics	Mean (SD)		P
	Intervention group (n=30)	Control group(n=30)	
Weight Before Pregnancy	52.28 kg (6.30)	50.81 kg (5.99)	0.360 <sup>a</sup>
Weight In Pregnancy	64.30 kg (5.97)	62.89 kg (6.08)	0.368 <sup>a</sup>
Birth Weight Babies	3.03 g (0.18)	3.04 g (0.12)	0.760 <sup>b</sup>
Weight Infant 2 months	4.19 g (0.29)	3.93 g (0.24)	0.000 <sup>b</sup>

Source: Primary Data, 2016; a. Independent-Samples T-Test ; b. Mann Whitney U Test

Table 3 presented the difference analysis of mother's weight before and after pregnancy, and birth weight and weight after birth between the intervention and the control group. Data showed, mother's weight before and after pregnancy increased, but there is no difference between the intervention and the control group. Baby's birth weight between the intervention and the control group were also no significant differences, but the baby weight after 2 months showed a significant difference.

#### **4. Discussion**

Pregnant women who were given modification module as an intervention group, all of them performed optimally early breastfeeding initiation practice, both in terms of implementation and nursing time while the mothers were given a standard module as a control group, the execution of early breastfeeding initiation was not optimal. Nonetheless, the data suggested that either the intervention or the control group had a healthy baby and until the age of 2 months, never experienced health problems that commonly experienced by infants, such as fever, diarrhea and vomiting. [19-21]. This is because breast milk is able to provide stabilization for the microbes in the intestine and nutrition is considered as one of the factors that play an important role for the composition and functions of microbiota in the intestine [22]. The decline in the incidence of hospitalization for fever in infants as well as an increase in breastfeeding by mothers to their infants [23].

The results showed that infants of mothers given the modified module of early breastfeeding initiation were more weight and differ significantly with infants who mothers given standard module, after 2 months old of baby. Theories related to this case is the mother's milk production stimulated better when done early initiation of breastfeeding [24,25]. Breastfeeding in the first hour after childbirth proven increase milk production and after 3 weeks, the production of breast milk of mothers who practice early breastfeeding initiation increase continuously and significantly different compared mothers who do not perform early breastfeeding initiation [26].

Although the provision of early breastfeeding initiation was not optimal, the effect on the health of infants during the first 2 months of birth showing positive direction. From the aspects of body weight, infants who mothers given modification module of early breastfeeding initiation and giving an optimal breastfeeding showed the increasing significantly compared with the control group.

#### **5. Conclusion**

Healthy of infants whose mothers given modified module of early breastfeeding initiation are not different with those whose mothers given a standard module, but weight infants of mothers given the modification module of early breastfeeding initiation are better than those who only given standard module.

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