The effect of Turtle Blanket to the Baby's Behavior in Early Breastfeeding Initiation

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Abstract

In Indonesia, the number of exclusive breastfeeding to the babies under age of 6 month in year 2016 was about 54,0% at Lampung Province and different with the babies under the age of 5 month was only 43,1%. One of the way to increase the production of milk from the mother was by doing Early Breastfeeding Initiation (IMD). The result of monitoring nutritional status (PSG) in year 2016, at Lampung Province there were about 48,5% babies exposed with early breastfeeding initiation, and it was under the average of national number. The quality of early breastfeeding initiation in Indonesia was low because from the achieving number of 51.9%, consist of 42.7% getting early breastfeeding initiation after an hour from baby's delivering, and about 9.2% in an hour or more after the birth. The goal of the study is to find out the relationship between the using of turtle blanket to the baby's behaviour of early breastfeeding initiation. This study is an experiment with *True Experiment* type and *Post Test Group* design. The population come from all normal babies borned by vaginal way out with 60 sample that divided into 2 groups, they are intervention group and control group. Bivariate analysis is using *T Test independent* test, and *multi variant test* with *Cohen's Effect Size*. The result of the study shows there is significant influence by the using of turtle blanket to baby's behavior in it rest stadium with p-value is about 0.003, the time spent by baby's moving to the mother's breast with p-value about 0.004 early breastfeeding initiation, spending time for baby in getting mother's nipple with p-value of 0.003, the length of the first baby's breastfeed with p-value of 0.000. Meanwhile, the un-significant behavior come when the baby produce saliva with p-value 0.052. Effect size test of baby's behavior that very related is the spending time by doing it first breastfeed with index of effect size for about 1.18 categorized in high standard. The suggestion come from the result of the study is, the health provider should socialize for using turtle blanket, especially for the newborn baby in their IMD time.

Keywords
Turtle Blanket, Baby's Behavior, Early Breastfeeding Initiation (IMD)

1. Introduction
Infant mortality is one sensitive indicator to know the health status of a country even to measure the progress of a nation. The high mortality of infants at the age of up to one year shows the quality of the health sector in the country is still low. The results of the 2015 Inter census Population Survey (SUPAS) showed that the Infant Mortality Rate in Indonesia was 22.23 per 1,000 live births, (MOH). The number of neonatal deaths in Lampung province in 2015 was 646 neonatal (4.14%) from 156,208 living births, and in the southern Lampung regency there were 58 neonatal deaths in 2015 (Din- Kes -Lampung Province).

Infant mortality can be reduced by providing breast milk (ASI). Breast milk plays an important role in creating a healthy baby. One effort to increase the successful of breastfeeding is through the implementation of Early Breastfeeding Initiations. IMD is an opportunity given to the baby, immediately after birth by placing the baby in the mother's stomach, then allowing the baby to find the mother's nipple and suckle until it satisfied. This process is carried out at least in the first 60 minutes (1 hour) after the baby was born (MOH, 2009). The implementation of IMD can save about 22% of infants who die before the age of 1 month. To achieve this goal, one of the actions taken by the government is by promoting the IMD, this effort is carried out to support the successful of the Exclusive Breastfeeding program (Roesli, 2008).

In Indonesia year of 2016, the percentage of infants 0-5 months who still get exclusive breastfeeding is about 54.0%, while the babies who have received exclusive breastfeeding until the age of six months are 29.5%. Referring to the 2016 strategic plan target of 42%, the national coverage of exclusive breastfeeding for infants under the age of six months was 54.0% which had reached the target. While in Lampung Province only reach 43.1%. While the scope of the implementation of the IMD from the results of Nutrition Status Monitoring (PSG) in 2016, the percentage of newborns who received IMD in 2016 was about 51.9% consisting of 42.7% getting IMD in <1 hour after the birth, and 9.2 % in one hour or more. The highest percentage is in DKI Jakarta Province (73%) and the lowest is in Bengkulu (16%). In Lampung province year of 2016, the number of IMD in newborns was 48.5% consisting 0f <1 hour after birth 41.5%, and 7% received IMD> 1 hour. The achievement of IMD in Lampung province is still below the national average.

When initiating early breastfeeding is skin-to-skin contact between mother and baby, furthermore to maintain the baby's body temperature to keep its warmth, a standardized blanket is needed. Therefore losing heat when the newborn is up to 30 minutes the baby is born can be prevented. Turtle blanket has a special feature that is the design of a blanket on the back of the baby coated by aluminum foil which serves to prevent heat loss by convection. With the baby's body warmth, the baby will quickly go through the stages of initiating early breastfeeding.

The results of the trial using turtle blanket in Early Breastfeeding Initiation obtained results in increasing the baby's body temperature before and after IMD in the intervention group on average of 0.74°c, while in the control group only 0.46°C, the results of the independent t-test were obtained Statistical results of P value = 0.002 mean that in alpha 5% there is an effect of using turtle blanket on infant body temperature during the implementation of Early Breastfeeding Initiation (IMD). Therefore the authors want to test whether this "Turtle Blanket" can provide an alternative to the success of IMD in newborns, by looking at other indicators like the behavior of infants during Early Breastfeeding Initiation

2. Research methodology

The research method used experimental research with quasi-experimental design. Study design of the Postest-Only Control Group Design study. Population of all normal baby newborns vaginally, based on predetermined inclusion and exclusion criteria. Determination of the number of samples taken based on the Federer formula obtained a large sample of 60 newborns divided into 2 groups, (intervention and control). The independent variable data collection uses intervention with the steps in the implementation of early breastfeeding initiation in accordance with the Standard Operating Procedure (SOP), the dependent variable is by observing the stages of infant behavior during IMD implementation. Processing data is using SPSS version 22. Analysis of data using Independent T-Test and to determine the effect size effect for each variable using the formula "Cohen's effect size"

3. Result and Discussion

Bivariate Analysis

Table 1 Results from the Analysis of the Effect in Using the Turtle Blanket during the break Phase of IMD implementation

The length of baby's break phase	N	Mean	Sd	Mean difference	SE difference	t	P value
Intervention	30	15.10	6.137	5.533	1.769	3.13	.003
Control	30	20.23	7.500				

The statistical test results show a significant value (p value = .003) smaller than α (0.05) and t count (3.13) higher than t table (0.05.58) (2.00) which means Ha is accepted or H0 is rejected. This means that there is an influence on the using of turtle blanket on the length of time for resting phase during the Early Breastfeeding Initiation (IMD)

Table 2 The results from the analysis in the effect of using the Turtle Blanket on baby's the behavior of sounding voice during the implementation of the IMD

Baby's time in sounding voice	N	Mean	Sd	Mean difference	SE difference	T	P value
Intervention	30	21.43	8.072	4.400	2.443	1.80	.077
Control	30	26.23	10.674				

From the results of data analysis, the statistic test results show a significant value (p value = .077) greater than α (0.05) and t count (1.80) smaller than t table (0.05.58) (2.00) which means Ha is rejected or H0 is accepted. It means that there is no influence on the length of baby's time to makes a sound during the implementation of the Early Breastfeeding Initiation (IMD).

Table 3 Results from Analysis of the Effect of Using Turtle Blanket on the Behavior of drooling During IMD Implementation

Baby's time for drooling	N	Mean	Sd	Mean difference	SE difference	T	P value
Intervention	30	24.17	8.579	5.300	2.663	1.99	.052
Control	30	29.47	11.793				

Statistical test results show a significant value (p value = .052) higher than α (0.05) and t Count (1.99) smaller than t table (0.05.58) (2.00) which means Ha is rejected or H0 is accepted. It means that there is no effect on the use of turtle blanket for the length of time that the baby goes through when the baby is drooling during the Early Breastfeeding Initiation (IMD)

Table 4 Results from the Analysis of the Effect of Using the Turtle Blanket on the Time the Baby Begins to Move to the Mother's nipple during the Implementation of the IMD

Baby's time to move to mother's nipple	N	Mean	Sd	Mean difference	SE difference	T	P value
Intervention	30	28.40	7.523	6.367	2.123	3.00	.004
Control	30	35.17	8.869				

The statistical test results show a significant value (p value = .004) smaller than α (0.05) and t Count (3.00) greater than t table (0.05.58) (2.00) which means Ha is accepted or H0 is rejected. This means that there is an influence by using of turtle blanket when the baby starts to move to find out for the mother's nipple when the baby is breastfeeding early (IMD).

Table 5 Results from the Analysis of the Effect of Using the Turtle Blanket on the Time of the Baby Finding out Mother's nipple during the Implementation of the IMD

Baby's time finding mother's nipple	N	Mean	Sd	Mean difference	SE difference	t	P valu
Intervention	30	37.30	13.368	11.200	3.548	3.16	.003
Control	30	48.50	14.107				

The statistical test results show a significant value (p value = .003) smaller than α (0.05) and t Calculate (3.16) higher than Table (0.05.58) (2.00) which means Ha is accepted or H0 is rejected. This means that there is an influence on using the turtle blanket when the baby finds / sucks the mother's nipple during the implementation of Early Breastfeeding Initiation (IMD).

Table 6 Results from the Analysis of the Effect in Using the Turtle Blanket on the Length of the Baby's First Breastfeeding during the Implementation of the IMD

The length of Baby's first breastfeeding	N	Mean	Sd	Mean difference	SE difference	t	P value
Intervention	30	15.20	6.316	-7.267	1.596	4.55	.000
Control	30	8.33	6.045				

The statistical test results show a significant value (p value = .000) smaller than α (0.05) and t count (4.55) higher than t table (0.05.58) (2.00) which means Ha is accepted or H0 is rejected. This means that there is a long-standing influence on the first time baby doing breastfeeding by the using of turtle blanket during the implementation of Early Breastfeeding Initiation (IMD)

Effect Size Analysis

The results from the analysis of the Effect Size according to the Cohen's Effect Size formula, for each hypothesis can be seen in the following table:

Table 7 Results of analysis of the size of the Effect Size

Hypothesis	Effect Size (d)	Influence Mean	Categorical
1. The effect of using turtle blanket on infant behavior during the duration of the resting stage / rest / quite alert stage during IMD implementation	0,81	79 %	Large
2. The effect of using turtle blanket on infant behavior sounding its voice, during the implementation of the IMD.	0,46	67 %	Medium
3. The effect of using turtle blanket on the infant drooling behavior, during the implementation of the IMD	0,51	70 %	Medium
4. The effect of using turtle blanket on infant behavior when the baby starts to move towards the breast / nipple during IMD implementation	0,77	78 %	Large
5. The effect of using turtle blanket on infant behavior when finding / sucking the mother's nipples during IMD implementation.	0,81	79 %	Large
6. The effect of the using turtle blanket on infant behavior of their first suckling duration during the implementation of the IMD	1,18	86 %	Large

Cohen, J. (1988). *Statistical Power Analysis for the behavioral Science Second Edition*. United States of America Associates: Lawrence Erlbaum.

The effect of using turtle blanket on infant behavior during the duration of the resting stage / rest / quite alert stage during IMD implementation.

In this phase, the baby is highly risk of getting hypotherm condition, this happened because newborn can not control its body therm, so it will make physical stress because the extreme changing of the therm outside uterus. The statement is in line with NImbalkar study result (2014) about *Effect of Early Skin-to-Skin Contact Following Normal Delivery on Incidence of Hypothermia in Neonates More Than 1800 g.* Result: 4% off SSC group/skin contact group undergo the condition of hypoterm, meanwhile the control group (without SSC/Skin contact) there are 16% newborn are undergoing the condition of hypoterm in its 48 first hours, so it can conclude that skin to skin between the mother and the baby will decrease hypoterm incidence towards mature or last stage of premature newborn baby. The observation result during environmental adjustment process to the room cold climate will make the rest stage of newborn baby longer than normal. This is because the baby's body therm is colder rather than inside the mother's womb and it makes the baby lazy to move. More marm will make the baby active to move and gaining the adjustment towards the environmental condition outside the mother's womb.

The effect of using turtle blanket on infant behavior sounding its voice, during the implementation of the IMD

Statistical study result shows that there is no effect between the lengths of time needed by the baby to sounding its voice when using turtle blanket comparing to control group during early breastfeeding (IMD). The baby with turtle blanket will quickly response the around environment by sounding its voice when it realizing that there is breastfeed near him. This is because the using of turtle blanket will increase the baby's therm, meanwhile the behave of the baby when it sounding the voice is because the respons from the existence of breastfeed around him and it related to hormonal factor.

The effect of using turtle blanket on the infant drooling behavior, during the implementation of the IMD

Baby's behavior when it realizing the existence of breasfeed around him is by drooling. Drooling start when the sense of smell begin its function. The result of the study shows that the babies with turtle blanket will quickly response the existence of breastfeed around him by drooling. Statistical result shows there is no relationship between using of turtle blanket with baby behavior during IMD, this is because the using of turtle blanket more affect to increase the baby therm, meanwhile drooling behavior is related to hormonal factor.

The effect of using turtle blanket on infant behavior when the baby starts to move towards the breast / nipple during IMD implementation

The motion of a baby crawling over his mother's body is the most natural motion a baby can do after birth, this movement provides many benefits for the mother, which will stimulate the release of the oxytocin hormone which will stimulate uterine contractions that help and promote placental release and reduce uterine bleeding . (Aritonang and Priharsiwi, 2006). In line with the research results of Kolifah at all (2013) The Correlation between Early Breasfeeding Inititation and Process of Exitation Placenta. The results of the study found that most (81.8%) respondents experienced fluency in the removal of the placenta. Almost all (68.2%) respondents managed to do IMD, the statistical test results $\rho \leq 0.05$, with the results of 0.039 <0.05. The results showed that the use of turtle blanket caused the baby acyive to move and find out the mother's breast. The activeness of the baby's body movements also provides many benefits for the mother, including accelerating the stimulation to release oxytocin hormone, oxytocin will stimulate uterine contractions so it helps to encourage the rapid process of removing the placenta. With rapid placenta realease will reduce the amount of bleeding in the third period of labor.

The effect of using turtle blanket on infant behavior when finding / sucking the mother's nipples during IMD implementation
When the baby sucks ASI, it stimulate the posterior pituitary so the oxytocin can be released, which it serves to increase contraction of smooth muscle around the alveoli glands so ASI can be removed directly. Oxytocin will also stimulate the uterine muscles to accelerate uterine involution (Manuaba, 2010). The same opinion expressed by Winberg (2005) which states that this skin contact, through sensory stimuli such as touch, warmth, and smell, can be strong vagal stimulation. This stimulation has one effect, which is the release of maternal oxytocin. The results of the study using turtle blanket can accelerate the process of adjusting the baby's environment outside the uterus, the more stable of baby's body temperature the more active the baby will move, with the baby moving actively the baby will find / suck the mother's breast. When the baby suck, it stimulate the posterior pituitary so that oxytocin can be released, octosin will stimulate the uterine muscle so as to accelerate the process of uterine involution.

The effect of the using turtle blanket on infant behavior of their first suckling duration during the implementation of the IMD
Early breastfeeding can control the condition of prolactin hormone levels do not have time to go down in the mother's blood circulation, so colostrum for the first day will come out faster. The absence of stimulation in the nipple means allowing the levels of prolactin and oxytocin to drop slowly in the bloodstream, causing the milk come out slightly and stop before the baby is 6 months old. The more often the baby is breastfeeding, the more milk is removed (Sucked) this will make more milk in production (Purwanti 2004). The same study by Rahayu RD et al. 2012 entitled The Success of Early Breastfeeding Initiation (IMD) and Duration of Breastfeeding. The results of statistical tests using chi-square with a 2x2 contingency test obtained the value of $P = 0.008$ which means that the value is below 0.05 where it indicates that there is a significant difference between the success of Early Breastfeeding Initiation to the Length of Breastfeeding. The results were obtained when IMD is using baby turtle blanket. The baby felt more comfortable and calm in his mother's arms. the more comfortable the baby is in the arms of his mother the baby will be more active and the length of time for breastfeeding, with the active breastfeeding baby and when the baby sucks the nipple stimulation will occur to the posterior pituitary which can stimulate oxytocin releasing. Oxytocin function is to increase contraction of smooth muscle around the alveoli of the breast gland, so that the process of removing colostrum can be released more quickly.

4. Conclusion
There is a significant difference on the duration of the rest / quite alert stage between infants using turtle blankets and babies who only use contemporary blankets with p value 0.003 during IMD implementation.
There is no significant when the baby is sounding its voice, between babies using turtle blankets and babies using contemporary blankets with p. value 0.077 at the time of the IMD implementation.
There is no significant when the baby stars drooling, between Babies using the turtle blanket and babies using contemporary blankets with p-value 0.052 at the time of IMD implementation
Here is a significant difference for the time when the baby begin to move towards the breast / areola between infants using turtle blankets and babies using contemporary blankets with p-value 0.004 at IMD
There was a significant difference when the baby found / suck the mother's nipples between babies using turtle blanket and babies using contemporary blankets with p-value 0.003 at the time of IMD implementation.
There is a significant difference on the baby first breastfeeding duration between infants using turtle blankets and babies using contemporary blankets with p-value 0,000 at the time of IMD implementation.

Effect Size of the baby's most influential behavior during the implementation of the IMD between infants using turtle blanket and babies using contemporary blankets, is the length time of the first suckling baby behavior with the effect size index of 1.18 with a large category standard.

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