

THE EFFECT OF EARLY BREASTFEEDING INITIATION (IMD) ON NEW BORN BABY TEMPERATURE IN BPS HEPPY RINA, S.ST, SEDURI VILLAGE-MOJOSARI AND BPS FIFIT, S.ST, PANJER VILLAGE-MOJOSARI

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ABSTRACT

Background: Newborns often experience a decrease in body temperature. This is due to the inability of newborns to maintain body temperature, subcutaneous fat that has not been perfect, the body surface is broad compared to body mass, and the temperature of the cold environment. To maintain the baby's body temperature to remain normal, an effort must be made. Hypothermia baby handling in BPS is to provide a warm light to increase the baby's body temperature by giving 100 watts of light.

Objectives: This study aimed to determine the effect of Early Breastfeeding Initiation (IMD) on the body temperature of newborns.

Methods: The research design used was experimental research with the design of the quassy experiment. The independent variable is the body temperature of newborns without Early Breastfeeding Initiation (IMD). The dependent variable is the body temperature of a newborn with Early Breastfeeding Initiation (IMD). The population of all maternity women is 20 people. The sample from this study were 16 maternity respondents. Sampling using accidental sampling method. The research was conducted at BPS Heppy Rina, S.ST, Seduri Village - Mojosari and BPS Fifit, S.ST, Panjer Village - Mojosari. Data collection uses primary data. The instrument used is a thermometer and checklist. Data is presented in the frequency distribution table and analyzed using the Willcoxon test.

Results: The results showed that almost all newborns without IMD had hypothermia (43.74%), most newborns with IMD had normal body temperature (37.5%), Willcoxon test results $p = 0.025 < 0.05$, then H1 was accepted which meant there was an influence of initiation Early Breastfeeding (IMD) on the body temperature of newborns at BPS Heppy Rina, S.ST Seduri Village - Mojosari and BPS Fifit, S.ST Panjer Village - Mojosari.

Conclusion: Based on the results of the study obtained early breastfeeding initiation (IMD) affects the body temperature of newborns. Based on the results of these studies, then the handling of newborns who experience hypothermic body temperature is more effective to do Early Breastfeeding Initiation (IMD).

Key words: Early breastfeeding initiation, newborn body temperature, hypothermic.

INTRODUCTION

Breastfeeding is a unique process that benefits not only infants and mothers, but also for families and communities. These benefits include health, development, psychological, social, economic and environmental. Initiation of early breastfeeding (early initiation) or the onset

of early breastfeeding is the baby starts breastfeeding itself immediately after birth (Rusli, 2008). Changes in temperature conditions occur in newborn neonates, in the body of the mother, fetal body temperature is always maintained, once born the relationship with her mother has been cut off and the neonate must maintain

his own body temperature through his metabolic activities. The smaller the neonate's body, the less fat reserves. The smaller the neonate's body also the higher the ratio of the body surface to its mass (Suhermi, 2009).

Rectal temperature is usually lower 1-2°F or 0.556-1.112°C compared to the core temperature of the body. The temperature of the tympanic membrane is very accurate because the middle ear has the same vascular source as the vascular to the hypothalamus (Suhermi, 2009), while the axillary temperature is related to the core temperature, therefore the normal value for per axillary temperature is 35.8°C-37.3°C. Newborns often experience a decrease in body temperature, this is due to the inability of newborns to maintain body temperature, imperfect subcutaneous fat, extensive body surface compared to body mass, and cold environment temperatures (Waylor, 2008).

The results of a study in Ghana published in the 2007 pediatrics journal showed that 16% of infant deaths could be prevented through breastfeeding babies from the first day of their birth. This number rises to 22% if breastfeeding starts in the first 1 hour after birth. The number of perinatal deaths in 33 provinces in 2010 in Indonesia was recorded at 217 cases. Early neonatal mortality (0-6 days) was reported at 142 cases (78.5%). The biggest proportion of deaths in early neonatal age is caused by respiratory disorders, prematurity and sepsis. Death of advanced neonatal infants (7-28 days) recorded 39 cases with the most common causes were neonatal sepsis (20%) (Indonesian Ministry of Health, 2010). The newborn infant mortality rate of 22% in the first month can be prevented by breastfeeding babies in the first hour, while breastfeeding on the first day of birth can reduce the infant mortality rate by 16%. In the process of initiating early breastfeeding the baby does not experience hypothermia or cold because the mother's arms against the baby and the temperature in the mother's chest will rise 2

° C (Rusli, 2008). Data from Mojokerto District Health Office in 2012 totaled 17,083 births, 83 newborn infant mortality, while 3 newborn babies in Mojosari Subdistrict (Mojokerto District Health Office, 2012).

Based on a preliminary study at BPS Heppy Rina, S.ST Seduri - Mojosari Village, Mojokerto Regency by observing 10 maternity mothers, it was obtained from 10 infants aged 2 hours as much as 4 (40%) having decreased body temperature (body temperature <36.5°C), and 6 (60%) infants aged 2 hours normal body temperature (body temperature 36.5 °C-37.3 °C).

The surface temperature of the skin increases or decreases in line with changes in ambient temperature. While the body's core temperature is regulated by the hypothalamus. But in pediatrics, the arrangement is still immature and inefficient. Therefore, in pediatric there is an important layer that can help maintain body temperature and prevent body heat loss, namely hair, skin and a layer of fat under the skin. The three layers can function properly and efficiently or not depending on the thickness. Unfortunately, most pediatrics do not have thick layers on all three elements. Heat transfer through the protective layer with the environment takes place in two stages. The first stage of the body's core heat is channeled towards the skin. The second stage of body heat is lost through radiation, conduction, convection or evaporation.

The body of a newborn is an organ that is able to produce heat independently and does not depend on the temperature of the environment. The body of the newborn has a set of systems that allow the body to produce, distribute, and maintain body temperature in a constant state. The heat produced by the body is actually a product of additional major metabolic processes. Decreasing body temperature in infants is one of the causes of mortality in neonatal morbidity and mortality (Sarwono, 2007). Difficulty in maintaining body temperature

especially hypoglycemia or hypoxia causes disruption of cell function and its chemical reaction is not optimal, decreasing body temperature causes a decrease in oxygen supply which causes decreased heart and respiratory frequency. This condition causes babies to experience asphyxia (Saifudin, 2007).

Mother's skin functions as an incubator, because mother's skin is a thermoregulator for babies. The skin temperature is 10°C higher than the mother who is not giving birth. If at birth the baby has hypothermia, with skin to skin contact automatically the mother's skin temperature will increase by 2°C. Conversely, if the baby has a hyperthermia, the mother's skin temperature will decrease by 10°C (Rusli, 2008).

Newborns should not be cleaned, just dry it, because it will eliminate vernix caseosa. The fat layer produced by the cerebrium gland serves as a protector, this layer will detach itself. Cleaning the baby's body by using soap containing hexachlorophen will result in vasodilation in the baby's central nervous system, which is characterized by seizures in the baby. When a newborn is immediately placed on her mother, her mother immediately feeds her.

A newborn should be brought close to the mother, because the baby's instincts will guide her when she is new, the baby's instincts bring her to look for her mother's nipples. In the first hour the baby finds his mother's breast, this is a sustained breastfeeding relationship between mother and baby. The process after IMD is continued with exclusive breastfeeding for 6 months (Sujiyatini, 2010). Treatment given to newborns has decreased body temperature in BPS by giving 100 watts of light, this condition is not effective because if IMD is done then the baby's body temperature will be normal.

METHODS

Study Design

The research design used was analytical research with the quasi experiment approach.

Setting

The study was conducted in BPS Heppy Rina, S.ST, Seduri - Mojosari Village and BPS Fifit, S.ST, Panjer - Mojosari Village.

Research Subject

The population in this study were all mothers giving birth at BPS Heppy Rina, S.ST, Seduri - Mojosari Village and BPS Fifit, S.ST, Panjer - Mojosari Village as many as 20 people. Samples from this study were maternity at BPS Heppy Rina, S.ST Seduri - Mojosari Village and BPS Fifit, S.ST Panjer Village – Mojosari as many as 16 respondents which were divided into 2 groups, namely the control group (without the initiation of early breastfeeding (IMD)) and the treatment group where respondents were carried out early breastfeeding initiation (IMD). The implementation of early breastfeeding initiation in this case is direct breastfeeding when giving birth. For the control group, mothers breastfeed their babies after being transferred to the room. Sampling uses accidental sampling technique.

Instruments

The instrument used to determine change in body temperature of newborn without the initiation of early breastfeeding (IMD) and with early breastfeeding initiation (IMD) is a thermometer and checklist.

Data Analysis

After the data is collected, data processing includes editing, coding, scoring, transferring, and tabulating. Data analysis using the Willcoxon test with SPSS 14.0.

Ethical Consideration

This research has obtained permission from National Unity and Politics of Mojokerto Regency.

RESULTS

Characteristics of Respondents by Age

Table 1. Distribution of Frequency of Respondents by Age in the BPS Heppy Rina, S.ST, Seduri Village – Mojosari Dan BPS Fifit, S.ST, Panjer Village – Mojosari (n = 16).

No.	Age	Frequency (f)	Percentage (%)
1	< 20 years	0	0
2	20-35 years	15	93.7
3	> 35 years	1	6.3
Total		16	100

Sources: Primary Data of Questionnaire

Based on the table 1, Almost all respondents aged 20-35 years were 15 respondents (97.3%).

Characteristics of Respondents by Educational Level

Table 2. Distribution of Frequency of Respondents by Educational Level in the BPS Heppy Rina, S.ST, Seduri Village – Mojosari Dan BPS Fifit, S.ST, Panjer Village – Mojosari (n = 16).

No	Educational Level	Frequency (f)	Percentage (%)
1	Basic Education (Elementary School-Junior High School)	10	62.5
2	Middle Education (Senior High School)	6	37.5
3	High Education (College)	0	0
Total		16	100

Sources: Primary Data of Questionnaire

Based on the results of the study in Table 2, it was found that most had taken basic education (Elementary School-Junior High School) as many as 10 respondents (62.5%).

Analysis of the Effect of Changes in Body Temperature of Newborns Carried Out by Early Breastfeeding Initiation (IMD) and Those That Did Not Initiate Early Breastfeeding (IMD)

Based on the table 3, it was found that the majority of newborns experienced hypothermia as many as 9 respondents (56.25%), consisting of 7 respondents (43.75%) in the group who did not initiate early breastfeeding and 2 respondents (12.5%) in the group who carried out early breastfeeding initiation. While the rest had normal body temperature as many as 7 respondents (43.75%), which consisted of 1 respondent (6.25%) in the group that did not carry out early breastfeeding initiation and 6 respondents (37.5%) in the group given early initiation. In addition, based on the Wilcoxon test results, it was found that $p = 0.025$, which means that the value is less than the significance level of $\alpha \leq 0.05$, so it can be concluded that there is an effect of initiating early breastfeeding on the body temperature of newborns.

Table 3. Analysis of the Effect of Changes in Body Temperature of Newborns Carried Out by Early Breastfeeding Initiation (IMD) and Those That Did Not Initiate Early Breastfeeding (IMD) (n = 16).

No	Temperature	Newborn's Body Temperature without Early Breastfeeding Initiation (IMD)		Newborn's Body Temperature with Early Breastfeeding Initiation (IMD)		Total	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1	Hypothermia	7	43.75	2	12.5	9	56.25
2	Normal	1	6.25	6	37.5	7	43.75
3	Hyperthermia	0	0	0	0	0	0
	Total	8	50	8	50	16	100

$p = 0.025; \alpha \leq 0.05$

Sources: Primary Data of Questionnaire

DISCUSSION

Newborn's Body Temperature without Early Breastfeeding Initiation (IMD)

Based on data in table 3, it was found that most newborns without early breastfeeding initiation experienced hypothermia as many as 7 respondents (43.75%).

Body temperature is the original body temperature which is the lowest temperature reached by the body during rest or sleep, the body's normal temperature is around 35.5°C-36°C (Proverawati, Islaely, & Aspuah, 2010). Body temperature is a balance between heat obtained with heat lost (Taylor, 2005). Homothermal organisms in general can be said that body temperature is always constant or constant even though the temperature of the environment changes. This is due to a chain interaction between the formation of heat and loss of activity regulated by the central nervous system that regulates metabolism, circulation, perspiration (evaporation), and work of the human body (Riwidikdo, 2009). Maintenance of the body temperature of a newborn can be achieved during early infancy by considering the baby's factors have a large body surface against the ratio of body weight, so that heat loss can be greater (Taylor, 2005).

The body temperature of a newborn hypotherm is caused by a change in the environment, which is from the moment it is held to outside the womb. Changes are

caused by the body of the newborn baby not ready to adapt to the new environment, so that the body temperature of the newborn when it is outside becomes hypothermia.

Newborn's Body Temperature with Early Breastfeeding Initiation (IMD)

Based on data in table 3, it was found that most newborns with early breastfeeding initiation did not experience hypothermia as many as 6 respondents (37.5%).

Based on the Indonesian Ministry of Health (2010), skin contact with the skin immediately after birth and breastfeeding babies in the first hour is important because: the mother's chest warms the baby appropriately as long as the baby crawls to look for the mother's breast and the baby's sucking on the nipple will stimulate the release of the oxytocin hormone.

Early Breastfeeding Initiation (IMD) describes an active baby finding the mother's own nipples, done by directly placing a newborn baby on her mother's chest and letting the baby crawl to find the mother's nipple to suckle. IMD must be done immediately at birth, without being delayed by weighing or measuring the baby. This process must take place skin to skin between baby and mother. If the baby is cold, the mother's chest will warm up to 2 degrees, if the baby is overheated automatically the mother's chest temperature drops to 1 degree. While the

temperature of newborns with Early Breastfeeding Initiation (IMD) has hypothermia due to improper implementation of IMD, so that skin to skin contact cannot be maximized, this condition causes the body temperature of newborns who experience hypothermia to not change. Besides that, with IMD which is not right causes a decrease in body temperature, this is the influence of the environment, where when the mother is still in the womb the temperature of the baby is still maintained normally, but after leaving the condition the newborn body is unable to adapt to the new environment. With early breastfeeding initiation provides enormous motivation for mothers to breastfeed babies.

Analysis of the Effect of Changes in Body Temperature of Newborns Carried Out by Early Breastfeeding Initiation (IMD) and Those That Did Not Initiate Early Breastfeeding (IMD)

Based on the Wilcoxon test results, it was found that $p = 0.025$, which means that the value is less than the significance level of $\alpha \leq 0.05$, so it can be concluded that there is an effect of initiating early breastfeeding on the body temperature of newborns.

. The Wilcoxon coefficient is obtained at -2,236, the negative sign indicates the opposite direction, if the Early Breastfeeding Initiation (IMD) is not carried out, the baby's body temperature will move away, meaning a decrease in baby's body temperature, with an error rate of $0.025 < 0.05$, which means there is an influence Early (IMD) on the body temperature of a newborn.

According to the conservation law of heat (Black Principle), if two substances have more different temperatures and are isolated in a system, then heat flows from a substance which is higher in temperature to a substance with lower temperature. In this case the conservation of energy plays an important role, the amount of heat lost from the high-temperature substances is the same

as the heat obtained by substances with lower temperatures (Sumarsono, 2009). Body temperature is the difference between the amount of heat produced by bodily processes and the amount of heat lost to the outside environment. Although in extreme body conditions during physical activity, the human temperature control mechanism maintains core temperature or deep tissue temperature is relatively constant. The surface temperature fluctuates depending on blood flow to the skin and the amount of heat lost to the outside environment. Due to fluctuations in surface temperature, acceptable temperatures range from 36°C or 38°C . The function of tissues and cells of the body is best in a relatively narrow temperature range (Taylor, 2005).

Babies cannot regulate their body temperature as adults do, due to the immaturity of the heat regulation mechanism, and also immature development because of that the environment temperature defense remains warm. During the early period after the baby is born, it usually results in cumulative heat loss of $2-3^{\circ}\text{C}$. This heat loss occurs through convection, conduction, radiation and evaluation.

According to Dr.'s research Niels Bergman, Mother's skin functions as an incubator, because Mother's skin is a thermoregulator for babies. Mother's skin temperature is 1°C higher than that of a non-maternal mother. If at birth the baby experiences a hypothermia, with skin to skin contact automatically the temperature of the mother's skin will increase by 2°C . Conversely, if the baby has a hypertherm, the mother's skin temperature will drop 1°C (Rusli, 2008). This means, with a BMI the risk of a hypothermia in a newborn that can cause death can be reduced. Newborns should not be cleaned, enough to dry will keep the fat layer that functions as a protector. The fat layer will release itself. To maintain the condition of the baby's body temperature, IMD is carried out, because the contact between the mother's

skin and the skin of the newborn will maintain the condition of the newborn's body temperature to increase from hypothermia to normal.

CONCLUSION

Based on the results of the study, it was found that the influence of the implementation of early breastfeeding initiation on the body temperature of newborns. Thus, the implementation of early breastfeeding initiation needs to be carried out for each newborn baby. In addition, by implementing early initiation it can also stimulate breastfeeding and increase breastfeeding exclusively. In the psychological aspect, the implementation of early breastfeeding initiation can also increase the sense of closeness between the baby and his mother, giving rise to a sense of comfort between the two.

SUGGESTIONS

Based on the results of this study, the need for further research in the form of the influence of the Early Initiation of Early Breastfeeding (IMD) with changes in body temperature of newborns with a sufficient number of respondents so as to improve the quality of research.

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