Volume 14 Nomor 1 (2024) 78-87

JURNAL KEBIDANAN

p-ISSN: 2089-7669 **; e-ISSN:** 2621-2870

https://doi.org/10.31983/ jkb.v14i1.11213

Warm Aluminum Foil Blankets to Prevent Hypothermia during Early Breastfeeding after Cesarean Delivery

Siti Mar'atus Sholikhah[1], Agus Kharmayana Rubaya[2], Niken Meilani[2]
[1]Poltekkes Kemenkes Yogyakarta and RSUD Ajibarang, Banyumas
[2] Poltekkes Kemenkes Yogyakarta, Indonesia
Jl. Tatabumi No.3 Banyuraden, Gamping, Sleman

Corresponding author: Niken Meilani
Email: niken.meilani@poltekkesjogja.ac.id

Received: February 21th, 2024; Revised: March 22th, 2024; Accepted: April 30th, 2024

ABSTRACT

Early Initiating Breastfeeding after cesarean delivery can increase the risk of hypothermia in the baby due to the cold temperature of the operating room and the mother's lowered body temperature. To prevent hypothermia, a heating method during breastfeeding initiation is needed. This study aims to evaluate the effectiveness of using aluminum foil warm blankets in preventing hypothermia in newborns after caesarean during early breastfeeding initiation. The study used a True Experiment Pretest Posttest Control Group Design with consecutive sampling. The research groups were randomly allocated. A total of 50 infants were included, with 25 infants receiving aluminum foil warm blankets in the experimental group, and 25 infants receiving warm blankets only in the control group. The treatment was given for 30 minutes in the recovery room, and the infant's temperature was measured with an axillary digital thermometer. Data analysis using the *Wilcoxon Signed Rank Test* showed that the body temperature of infants increased from moderate hypothermia (35.75°C in the experimental group and 35.8°C in the control one) to mild hypothermia (36.34°C in the experimental group and 36.12°C in the control one). *The Mann-Whitney U test* showed a significant difference in the average body temperature of newborns between the experimental group and the control group, with a p-value<0.05. The study concluded that using aluminum foil warm blankets is better than using warm blankets alone in increasing the body temperature of babies born through cesarean section during early breastfeeding initiation in the recovery room.

Keywords: blanket; early initiation of breastfeeding; temperature; labor; baby

Introduction

Thermoregulation of newborns is very important. Considering that the neonate's ability to produce heat is still low and there is a risk of hypothermia. Neonatal hypothermia is defined as a core temperature below 36.5°C [1]. Hypothermia contribute to most neonatal deaths. [2] Indonesian Health Profile 2021 reports that 73.1% of 27,566 infant deaths occurred during the neonatal period, 20,154 cases [3]. Based on data from the Banyumas District Health Service, the infant mortality rate in 2021 is 219 cases, 50% of which occur in infant aged 0-6 days [4].

As a preventive measure, the World Health Organization (WHO) has recommendedcontact skin to skin or SSC (Skin to skins contact) early initiation of breastfeeding (EIBF) as two interventions that must be carried out simultaneously to obtain optimal benefits. EIBF is placing the baby face down on the mother's chest without any clothing separating them, without interruption for at least 60 minutes or until the completion of the first breast milk feeding in all delivery methods [5].

Villinsky in 2020 reported that the mother's temperature was hypothermic due to the anesthesia procedure of Caesarean Delivery, because the operating room temperature ranging between 19°C -22°C will increase the risk of heat loss in newborn babies skin to skin contact process, it means that early initiation of breastfeeding cannot be carried out after a CS delivery.

Villinsky in 2020 reported that the temperature of mothers who experience

hypothermia due to anesthesia procedures. Operating room temperature ranging from 19°C - 22°C will increase the risk of heat loss in newborn babies during skin contact, this results in the baby becoming hypothermic. CS delivery often IEBF is not performed [6].

Efforts to prevent hypothermia during EIBF after CS are by providing active warming measures with FAW (Force Water Warming) during the perioperative period, as in Horn's 2014 study which reported that it warms the surface of the surface of the mother's skin from the beginning of the operation to the end. This period results in a neonatal core temperature of 37°C and reduces the incidence of hypothermia [1].

Based on the results of interviews with the head Perinatology room at Ajibarang Regional Hospital, the temperature of the recovery room ranges between 22°C-25°C, the temperature of the post-CS mother which is still hypothermic and warm-up activities during perioperative CS which have not become operational standards, as one of the obstacle in the implementation. This problem will impact the failure of the full 60-minute EIBF practice due to intervention in the form of warming the neonates after CS in the incubator before the EIBF process is complete and separation between mother and baby for quite a long time.

Early Initiation of Breastfeeding basically should not be delayed because the newborn's sucking reflex will reach its peak at the age of 20-30 minutes and this reflex will continue to decrease and weaken over time if it is not stimulated and this will affect the successful process of exclusive breastfeeding [7].

Based on scientific evidence, apart from active warming procedures during the perioperative period, another alternative that can be done so that EIBF practices occur according to standards is the technique of external heating that is method warming process with how to cover a blanket that has been heated with aluminum foil which is insulator hot to hold the heat from the warmed blanket. A layer of aluminum foil will trap the heat from the heated blanket covering the body mother so that the mother's body temperature after CS will increase, and this will have an effect on increasing the baby's temperature on moment contact skin Mother and baby. So that's the goal EIBF as warmer for baby can be achieved [8].

Study of Sudarmi (2019) showed that the effect of aluminum foil blankets on the body temperature of babies born during EIBF after normal labor for 1 hour, the results showed a significant difference between the treatment group and the control group [9]. The difference with this research is that the intervention carried out in this study was in the form of a heated blanket covered with a layer of aluminum foil. The subjects of this research were neonatus after CS who had skin contact with the mother after CS at a lower temperature room. Based on this background, researchers are interested in researching the effect of aluminum foil warm blankets on preventing hypothermia in BBL SC during IMD in the recovery room at Ajibarang Regional Hospital.

Research methods

This type of research is quantitative research with a Quasi Experimental type with Pretest Posttest Control Group Design. The selection of the experimental group and control group was carried out randomly, by drawing lots and the research subjects did not know the treatment they would receive. The experimental group was post-SC EIBF neonates who were given a warm aluminum foil blanket, while the control group was post-SC EIBF neonates who were given a warm blanket only.

A warm aluminum foil blanket is a cotton blanket that has been warmed using a heating device, then covered with an aluminum foil blanket on top as a heat insulator during EIBF. This aluminum foil blanket is easy to find on the market and affordable. The limitation of this blanket is that it is only used once. The following is a picture of an EIBF with an aluminum foil warm blanket.

A warm aluminum foil blanket is a cotton blanket that has been warmed using a heating device, then covered with an aluminum foil blanket on top as a heat insulator during EIBF. This aluminum foil blanket is easy to find on the market and affordable, only the limitation of this blanket is that it can only be used once. Here's a figure 1 of EIBF with an aluminum foil blanket.

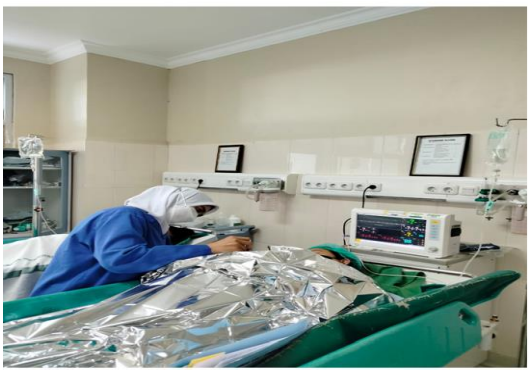


Figure 1.
EIBF with a warm blanket covered with aluminum foil blanket

The research population was BBL post-CS at Ajibarang Regional Hospital from March-April 2023. The sample size measurement using the Lameshow formula for the 2 Mean Difference Test is as follows [10].

$$n1 = n2 = \frac{2\sigma^2(Z_{1-\alpha/2} + Z_{1-\beta})^2}{(\mu_1 - \mu_2)^2}$$

$$n1 = n2 = \frac{2x0{,}4^2(1{,}96 + 0{,}84)^2}{(1{,}1)^2} = \frac{2{,}5088}{1{,}21} = 20{,}73$$

The number of samples was then maximized to 25 experimental groups and 25 control groups.

Inclusion criteria include baby born from Mother with CS elective with anesthesia spinal, age pregnancy 37-41 weeks +6 days, birth weight ≥ 2500 grams, while the exclusion criteria are babies born with genetic disorders, mothers suffering from infectious diseases, and chronic diseases, score Apgar 5 minute <7/ asphyxia currently, and gemelli.

The data collection technique is carried out by taking primary data from temperature observations baby before the intervention, 5 minutes first, and minutes to 30 after the intervention. The instrument used is a thermometer digital axillary that has been calibrated by BMD Laboratory and has been accredited ISO/IEC 17025:2017 KAN with registration number LK-232-IDN with results calibration is a good condition to use.

Post-SC surgery mothers will be observed for 30 minutes before being transferred to the postpartum room post-operative recovery room. The mother is still wearing a surgical gown and the room temperature is regulated at temperature 22°C-25°C, contact skin with the baby for 30 minutes. The blanket was warmed first before being used, on a tool warmer until the temperature was 40°C. Then EIBF was carried out using a warmed blanket covered with aluminum *foil* in the experiment group and only used a warm blanket in the control group. Baby and the mother's temperature was then measured before the intervention, 5 minutes, and 30 minutes after the intervention.

Statistical analysis was carried out using computer devices. Data analysis consisted of univariate analysis for descriptive analysis of research subjects based on the characteristics of mother's age, gestational age, baby's weight, recovery room temperature, mother's weight, mother's BMI, mother's temperature, and baby's temperature before and after the intervention, for both research group. After homogeneity and normality tests were carried out, it was continued with bivariate analysis. To determine the effect of the intervention on the baby's temperature in each research group, the Wilcoxon Signed Rank Test was used, while to determine the effect of the aluminum foil warm blanket compared to the warm blanket alone on increasing the baby's temperature, the Mann Whitney test was used. The last one is an analysis to show the increasing temperature during EIBF, to determine the strength of the relationship between maternal temperature and infant temperature in each research group, used *Spearman rank test*.

Study This has an ethical approval letter with number DP.04.03/e- KEPK.1/053/2023 dated 8 February 2023 from the Ethic Committee Poltekkes Kemenkes Yogyakarta Yogyakarta.

Results and Discussion

Table 1.
Characteristics respondents

Variable	Group				*P Value*
	Experiment		Control		
	n=25		n=25		
	Mean	SD	Mean	SD	
Gestational age	38.81	1.37	38.39	1.2	0.09
Baby's weight	3160.6	381.3	3117.4	348.28	0.49
Mother's age	64.76	11.3	64.76	9.5	0.17
Mother's BMI	25.73	2.8	26.69	2.7	0.89
Room temperature	24.32	0.47	24.53	0.54	0.55
Mother's Age	28.12	4.56	28.16	4.53	0.95

Table 2.
Characteristics Respondent Based on Baby's Sex

Sex	Group				Total		*p value*
	Experiment		Control				
	n	%	n	%	n	%	
Male	13	26	11	22	24	48	
Female	12	24	14	28	26	52	0.777
Total	25	50	25	50	50	100	

Table 3.
The Average Mother And Baby Temperature among Experiment and Control groups in the recovery room

Variable	Group Experiment n=25		Group Control n=25		*p value*
	Mean	elementary school	Mean	elementary school	
Baby's Temperature					
Before EIBF	35.75	0.22	35.80	0.28	0.29
15 minutes after EIBF	35.94	0.21	35.94	0.27	0.47
30 minutes after EIBF	36.34	0.16	36.12	0.21	0.24
Mother's Body Temperature					
Before EIBF	35.49	0.49	35.67	0.46	0.29
5 minutes after EIBF	36.01	0.41	35.94	0.37	0.16
30 minutes after EIBF	36.48	0.12	36.37	0.12	0.29

Table 4.
Differences Average Baby Temperature 15 minutes and 30 minutes among Experiment Group with Test *Wilcoxon Sign Rank*

Variable	n	Group Experiment		Z	*p value*
		Positive Rank	Mean Rank		
Baby Temperature 15 minutes and 30 minutes	25	25	13	-4,416	0,000

Table 5.
Differences Average Mother Temperature 15 minutes and 30 minutes among Experiment Group with Test *Wilcoxon Sign Rank*

Variable	n	Group Experiment		Z	*p value*
		Positive Rank	Mean Rank		
Mother Temperature 15 minutes and 30 minutes	25	25	13	-4,385	0,000

Table 6.
Difference Average Baby Temperature 15 minutes and 30 minutes among the Control Group with Test *Wilcoxon Sign Rank*

Variable	n	Control Group		Z	*p-value*
		Positive Rank	MeanRank		
Baby Temperature 15 minutes and 30 minutes	25	25	13	-4,455	0,000

Table 7.
Difference Average Mother Temperature 15 minutes and 30 minutes among Control Group with Test *Wilcoxon Sign Rank*

Variable	N	Control Group		Z	*p value*
		Positive Rank	Mean Rank		
Mother Temperature 15 minutes and 30 minutes	25	25	13	-4.39	0,000

Table 8.
Differences Average Temperature Baby 15 minutes dan 30 minutes between experiment and control group

Variable	n	Group		Z	*p value*
		Experiment Mean Rank	Control Mean Rank		
Temperature Baby					
15 minute after treatment	50	25.70	25.30	-0.098	0.922
30 minute after treatment	50	32.60	18.40	-3,485	0,000

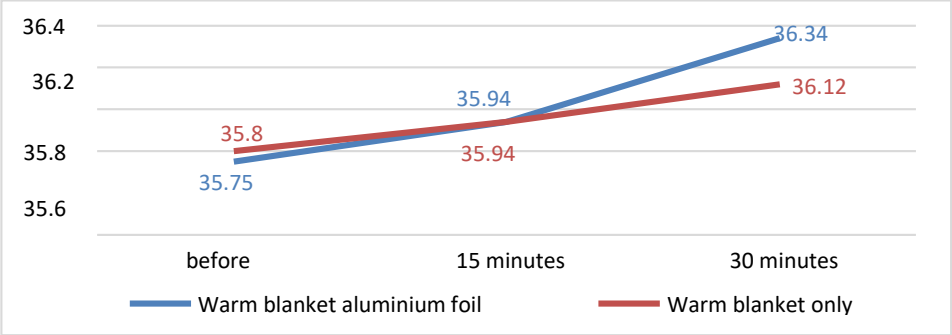
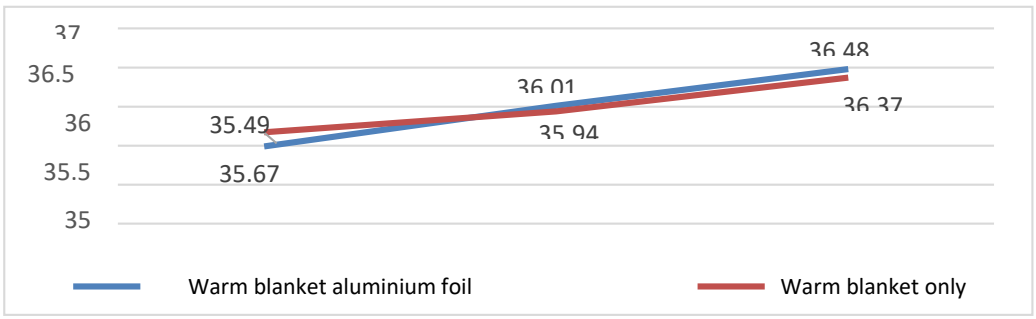


Figure 3.
Difference Average Baby's Temperature between experiment and control group

Table 9.
Difference in Mean Mother's Temperature 15 minutes dan 30 minutes between experiment and control group

Variable	n	Group		Z	*p value*
		Experiment Mean Rank	Control Mean Rank		
Temperature Mother					
15 minute after treatment	50	27.44	23.56	-0.945	0.345
30 minute after treatment	50	30.62	20.38	-2,558	0.011



Picture 4.
Difference Average Temperature Mother Group Experiment And Control

Table 10.
Differences in Baby Temperature Before and After intervention among Experiment and Control Groups

Variable	n	Group		Z	*p value*
		Experiment	Control		
		Mean Rank	Mean Rank		
Difference in baby's temperature before and after intervention	50	34.06	16.94	-4,211	0,000

Table 11.
Results Test Correlation Between Mother And Baby Temperature with Blanket Warm Aluminum *Foil.*

Correlations Group Experiment				
			Baby Temperature	**Mother Temperature**
Spearman's rho	Temperature Baby	Correlation Coefficient	1,000	,579 **
		Sig. (2-tailed)	.	,002
		N	25	25
	Temperature Mother	Correlation Coefficient	,579 **	1,000
		Sig. (2-tailed)	,002	.
		N	25	25

Table 12.
Results Test Correlation Between Mother And Baby Temperature Which with Blanket Warm only

Correlations Group Control				
			Baby Temperature	**Mother Temperature**
Spearman's rho	temperature Mother	Correlation Coefficient	1,000	,389
		Sig. (2-tailed)	.	,055
		N	25	25
	temperature baby	Correlation Coefficient	,389	1.000
		Sig. (2-tailed)	.055	.
		N	25	25

Descriptive analysis based on variable baby's weight, sex, mother's age, gestational age, mother's BMI, mother's age, and temperature recovery room is shown in the table 1.

Based on tables 1, 2, and 3, show the characteristics of the respondents and the average temperature of the Mother and baby in group experiments and group control is comparable (homogeneous) with a p-value >0.05. The average temperature of mothers and babies before and after treatment in the experimental group and after treatment in the treatment and control groups is shown in table 3. Based on table 3, most mothers and babies experienced cold stress hypothermia before intervention was carried out. The average temperature of babies before EIBF was 35.75 ℃ in the experimental group and 35.8 ℃ in the control group. The average initial maternal temperature was 35.49℃ in the experimental group and 35.67℃ in the control group. These findings are in accordance with Sa'adah's 2018 research which reported that the average temperature of babies before intervention was mild hypothermia (35.99℃) [11]. Listiyanawati's research in 2018 reported that the average initial post-CS maternal temperature was 34.92℃ [12].

Neonatal hypothermia is influenced by several factors, such as environmental factors, there are decrease temperature's room increase heat loss through radiation, physiological factors where newborn babies have less subcutaneous fat, behavioral factors such as placing the baby on the resuscitation table, cold baby clothes or baby blankets. Due to exposure to minimum temperature on operating room [2]. Hypothermia among mothers is influenced by intraoperative procedures,

such as the administration of cold fluids, inhalation of cold gases, open wounds on the body, decreased muscle activity, impaired thermoregulatory responses due to the use of anesthetic drugs, and patient exposure to minimun temperature's room.

Maternal hypothermia that occurs perioperatively can continue into the post operative period in the recovery room [13]. During skin contact, the skin temperatures of the mother and baby are reciprocally modulated, allowing the mother to act as a warmer for the baby [9]. The suboptimal maternal temperature has the potential to negatively impact neonatal outcomes during skin-to-skin contact immediately after CS in the conduction recovery room. Plus the environmental temperature of the IBS recovery room at Ajibarang Regional Hospital which is quite cold (23℃-24℃) increases the risk of hypothermia in neonatus post CS by radiation [14].

The results of the normality test for the baby's and mother's body temperature data showed no results distribute normal with a p-value <0.05, so that analysis statistics, used is Wilcoxon Signed rank Test, for compare the average temperature baby in each research group and Mann Whitney to compare temperature means baby between group study.

Enhancement of Average Neonatus And Mother Temperature among Control Group

Table 6 and Table 7 show that there are differences in the average temperature of babies and children's temperature Mother minute to 15 and 30 minutes after treatment in the control group with *p-value* = 0,000 (*p-value* <0.05).

After being given intervention for 30 minutes, the average temperature of mothers in the blanket group with warm aluminum foil increased as big as 0.99 degrees (35.49 □□C become 36.48 □□C). The average maternal temperature in the

Based on the figure showed that, there was no significant difference in maternal body temperature at 15 minutes after treatment between the experimental group and the control group. This is explained in table 9 where the results of the Mann Whitney Test are show mark p value as big as 0.345. As for after 30 minute done intervention is obtained p value is 0.000, which means there is a significant difference in the average body temperature of the mother experimental group And control.

Tables 8 and 9 explain that there is no difference in mean of Baby's temperature and mother's temperature between experiment and control group at 15 minute after treatment. Similar result to previous study of Ekorini's research 2021, that there is no effect of giving a warm blanket warm blanket alone group also increased by 0.67 egrees 35.67ºC becoming 36.34. The average temperature baby after 30 minutes given treatment Also experienced an increase of 0.59°C (35.57°C to 36.33°C) in the experiment was higher than the control group, namely 0.32°C (35.8°C to 36.15°C). Based on tables 4, 5, 6, and 7, it can be concluded that warm blankets covered with aluminum foil and warm blankets only, both have an influence on baby temperature and mother temperature moment EIBF with p-value 0,000.

A previous study by Sudarmi (2019) show the temperature baby on a group maintenance routine Also experienced an increase due to warmth from skin contact with their Mother, However enhancement temperature in the group of babies who were given EIBF with an EIBF blanket was higher than babies who were given EIBF with a regular blanket [9].

Based on Marlinda's research in 2017, it shows that the average maternal temperature in the control group there was increased only when the temperature returned to normal in group control during 22.67 minutes, whereas the experiment group showed an average time return temperature to normal during 10.07 minutes [15].

The difference in Average Temperature Baby and Mother's Temperature Before And After Treatment Between Group Experiment And Control

Temperature there was no difference in the baby's body 15 minutes after treatment between the experimental group and the control group. This is explained in table 8 where the results of the Mann-Whitney Test show a p-value of 0.922. Meanwhile, after 30 minutes of intervention, there was a visible significant difference in the baby's body temperature between the experimental and control groups with p-value of 0,000.

(blanket warmer) on changes in central temperature post-operative patients at 15 minutes with a p value of 0.196, because the heat transfer process from the blanket is not optimal in a relatively short time of 15 minutes [16], [17].

A significant difference in the mean temperature of babies and mothers between the experiment and the control group only appeared 30 minutes after the intervention with a p-value of 0.001. Similar to the previous study, Marlinda's research in 2017, showed that the temperature of the warm blanket began to decrease after 30 minutes because the heat from the blanket was transferred by radiation to a cooler environment, making it less effective at storing heat for a long time. This is different from aluminum foil blankets which can

maintain heat from warm blankets and are not affected by cold room environmental temperatures because the aluminum blankets are waterproof and windproof so that the heat from warm blankets can increase body temperature to the maximum. Heat flow will occur from an object with a higher temperature to an object with a lower temperature until thermal equilibrium is reached [15], [18].

If we compare the difference in baby's temperature before and after the intervention in the two research groups, it also shows a significant difference. Where the difference in baby's temperature before and after intervention in the aluminum foil warm blanket group was 0.59℃, while the difference in baby's temperature in the control group was 0.32℃. Table 10 explains the results of the Mann-Whitney test, the difference in mean baby temperature between the experimental and control groups obtained a p-value <0.05. So it can be concluded that the effect of the aluminum foil warm blanket is better than the warm blanket alone in increasing the temperature during EIBF of

Table 11 shows the results of the Spearman's Rank correlation test between mother and baby temperatures in the experimental group which has a moderate level of correlation with a correlation value of 0.579. Table 12 explains that the results of the Sperm Rank correlation test between the mother's and baby's temperature in the control group have a weak relationship with a correlation value of 0.389. However, both groups showed a positive direction of relationship, which means that when EIBF was carried out, the higher the mother's temperature, the higher the baby's temperature.

It's just that the strength of the relationship between the temperature of mothers and babies treated with EIBF with a warm aluminum foil blanket is higher than the strength of the relationship between the temperature of mothers and babies treated with EIBF with a warm blanket only. The increase in the baby's temperature refers to the increase in the mother's body temperature. Because on In principle, during EIBF, the mother acts as an incubator/thermoregulator of temperature for the baby's body. The results of Chiu's quoted by Sudarmi in 2021 stated that mother had own ability to arrange the temperature baby during contact with the Mother And baby. Mother is a thermoregulator for BBL moment EIBF [9]. The use of aluminum foil blankets has been proven to be effective in increasing the mother's temperature and positive influence on increasing the temperature of the baby moment EIBF after SC surgery which took place in a room recovery cold one.

post CS baby.

The superiority of this aluminum foil warm blanket has been proven in Setiyanti's 2020 research which explains that aluminum foil blankets can be used as passive external rewarming in cases of hypothermia because they are able to maintain and retain 90% of body heat for longer, and can also reduce the rate of heat transfer by covering the body. patient with an aluminum foil blanket until body temperature returns to normal. Aluminum foil blankets are relatively cheap and easy to use. Giving aluminum foil blankets is safe and beneficial for patients because it has no complications in its application.

Correlation of Mother Temperature and Baby Temperature in the Experimental and Control Groups

To determine the close relationship between the baby's body temperature and the mother's body temperature when IMD was carried out in both the experimental group and the control group, the Spermerman's Rank correlation test was carried out.

Conclusion

Based on the research results, this study showed that: 1) The average body temperature of babies before treatment was still in the moderate hypothermia category, 35.75℃ in the experimental group and 35.8℃ in the control group. After treatment for 30 minutes, the temperature increased to mild hypothermia, 36.34℃ in the experimental group and 36.12℃; 2) There is a difference in the mean temperature of babies in the experimental group and the control group after treatment for 30 minutes in the recovery room, namely 36.34 in the experimental group and 36.12 in the control group with a p value <0.000; 3) The effect of a warm aluminum foil blanket is better than a warm blanket alone in preventing hypothermia when IMD is performed on baby in the recovery room for 30 minutes; 4) There is a relationship between the mother's temperature and the temperature of the baby who was given EIBF using an aluminum foil warm blanket with a moderate level of closeness and a positive direction of the relationship. This means that the higher the mother's temperature, the more the baby's temperature will increase when EIBF uses an aluminum foil warm blanket only.

Acknowledgment

Researchers would like to thank the Indonesian Ministry of Health for providing assistance with the costs of this education and research. To the Director of Ajibarang Regional

Hospital, Pediatricians, nurses, midwives, and all parties who we cannot mention one by one, who have helped this research process to be carried out well.

Reference

[1] E. P. Horn, B. Bein, M. Steinfath, K. Ramaker, B. Buchloh, and J. Höcker, “The incidence and prevention of hypothermia in newborn bonding after cesarean delivery: A randomized controlled trial,” *Anesth. Analg.* , vol. 118, no. 5, pp. 997–1002, 2014, doi: 10.1213/ANE.0000000000000160.

[2] effect and prevention Vilinsky, AlionaHypothermia in the newborn: An exploration of its cause and A. Sheridan, “Hypothermia in the newborn: An exploration of its cause, effect and prevention,” *Br. J. Midwifery* , vol. 22, no. 8, pp. 557–562, 2014, doi: 10.12968/bjom.2014.22.8.557.

[3] Ministry of Health, *Indonesian health profile* . 2021.

[4] District Health Service. Banyumas, *Analysis of Maternal Deaths in Banyumas Regency in 2019* . Banyumas: Banyumas District Health Service, 2019.

[5] World Health Organization (WHO), *Protecting, promoting and supporting Breastfeeding in facilities providing maternity and newborn services: the revised Baby-Friendly Hospital Initiative*. 2018. doi: 10.1002/9780470935576.ch7.

[6] E. McCall, F. Alderdice, H. Halliday, L. Johnston, and S. Vohra, “Challenges of minimizing heat loss at birth: A narrative overview of evidence-based thermal care interventions,” *Newborn Infant Nurs. Rev.*, vol. 14, no. 2, pp. 56–63, 2014, doi: 10.1053/j.nainr.2014.03.008.

[7] A. Maryunani, *Inisiasi Menyusu Dini, ASI Eksklusif dan manajemen Laktasi*. Jakarta: Trans Info Media.

[8] E. Marlia, "Effectiveness of Aluminum Foil Blankets and Warmer Machine Blankets on Body Temperature in Post-Debridement Surgery Patients at Public Hospital Nursing Study Program, Karya Husada College of Health Sciences," *Idea Nurs. J.* , vol. 1, no. 5, 2021.

[9] S. Sudarmi, S. Supriatiningsih, and NI Tri Novadela, "The Effect of Using an Early Breastfeeding Initiation Blanket (SEIBFi) on the Baby's Body Temperature During Early Breastfeeding Initiation (EIBF)," *J. Health.* , vol. 10, no. 1, p. 67, 2019, doi: 10.26630/jk.v10i1.1198.

[10] S. Notoatmojo, *Health Research Methodology* . Jakarta: Rineka Cipta, 2010.

[11] U. Sa'adah, N. Khayati, and machmudah, "Early Initiation of Breastfeeding (EIBF) Increases the Body Temperature of Sectio Caesarea Babies at RSUP Dr. Kariadi Semarang," vol. X, no. 01, pp. 69–79, 2018, [Online]. Available: file:///C:/Users/ASUS/Downloads/12.pdf

[12] MD Listiyanawati and N. Noriyanto, "Effectiveness of Electric Blankets in Increasing the Body Temperature of Post-Caesarean Section Patients Who Experience Hypothermia," *J. Health. Vocational* , vol. 3, no. 2, p. 69, 2018, doi: 10.22146/-.38239.

[13] AM Harahap, RK Kadarsah, and E. Oktaliansah, "Incidence Rates of Hypothermia and Length of Treatment in the Recovery Room in Geriatric Patients after Elective Surgery in October 2011–March 2012 at Dr. Hospital. Hasan Sadikin Bandung," *J. Perioper Anesthesia.* , vol. 2, no. 1, pp. 36–44, 2014, doi: 10.15851/jap.v2n1.236.

[14] A. Vilinsky-Redmond, M. Brenner, C. McCaul, and M. McCann, “Skin to skin contact following cesarean section: A narrative review,” *Br. J. Midwifery* , vol. 28, no. 11, pp. 754–760, 2020, doi: 10.12968/bjom.2020.28.11.754.

[15] E. Malinda, MR Ramdani, and ER Mariana, "Comparison of Warm Blankets Covered with Aluminum Foil Blankets on the Speed of Return to Normal Body Temperature in Post SC (Section Caresar) Hypothermic Patients in the Coverage Room at Ulin Hospital, Banjarmasin," *Semin. and Work. Nas. Nursing* , pp. 206–212, 2017.

[16] D. Ekorini and S. A. Lumadi, “The Effect of Giving A Warm Blanket to Changes in The Central Temperature of Postoperative Patients with Subarachnoid Block Anesthesia in RSSA Malang,” *J. Keperawatan*, vol. 12, no. 1, pp. 83–92, 2021, doi: 10.22219/jk.v12i1.10800.

[17] Y. Laska, M. Siregar, and L. Hariyanti, “The Effect of Lavender Aromatherapy on Reducing the Intensity of Labor Pain in the 1st Active Phase,” *J. Kebidanan*, vol. 13, no. 1, pp. 1–8, 2023, [Online]. Available: http://jurnal.unimus.ac.id/index.php/jur_bid/article/view/815/868

[18] ZZ Mutaqin, N. Lidya, I. Astuti, and N. Meilani, "Evaluating the Efficacy of the Zelisken Ball in Shortening the First Stage of Labor: A Quasi-Experimental Study of Zeni Zaenal Mutaqin," vol. 21, pp. 736–748, 2023,

doi: 10.31965/infokes.Vol21Iss4.1419.
[19] W. Setiyanti, "Effectiveness of Aluminum Foil Blankets on Hypothermia in Postoperative Patients at Salatiga Regional Hospital," no. December, pp. 1–12, 2015.