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THE EFFECT OF KANGAROO COUNSELLING CARE METHOD TOWARDS ANTHROPOMETRY OF LOW-BIRTH-WEIGHT

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ABSTRACT

Objective: *The result of population inter-census survey in 2015 revealed that Infants Mortality Rate reached 22.23 per 1000 of live birth, and one of its causes in Indonesia is BBLR by 10.2%. Moreover, the case of BBLR in Hospital Patut Patuh Patju of West Lombok Regency in 2017 was 16.25% slightly decreased than in 2016 by 17.11%. One of the BBLR's care efforts which is proven simple, cheap, and highly recommended is Kangaroo Mother Care (KMC). This study aimed at finding out the effect of Kangaroo Counselling Care Method towards the increase of baby's body length for low birth weight at Hospital Patut Patuh Patju of West Lombok Regency.*

Method: *This study used Quasi Experimental under Nonequivalent Control Group Design with 34 babies as sample who were divided into two groups; intervention group consisted of 19 babies treated through counselling, and Kangaroo Care Method, meanwhile, the control group was 15 babies treated through everyday Baby Care.*

Result: *The increase of babies' body length in intervention group was 1.29 cm. Meanwhile, the control group was 1.01 cm per 2 weeks. The result of statistical test using Mann Whitney was p = 0,005.*

Conclusion: *There is an effect of Kangaroo Counselling Care Method towards the increase of babies' body length for low birth weight at Hospital Patut Patuh Patju of West Lombok Regency.*

Kata Kunci : *Counselling, Kangaroo Care Method, BBLR*

INTRODUCTION

World Health Organization (WHO) defined that Low Birth Weight as babies born with less than 2500 weight. BBLR is still as a significant social health problem globally because of its short-term or long-term effects towards the health[1]. BBLR is caused by premature birth or growth disorder in utero or pathologist combination in both of them.[2]

More than 20 million babies, 15,5% among all births in the world are BBLR and 95% of them occurs in developed countries, 11.6% of the total BBLR in the world arise in Asia Tenggara.[1] It means that one of the seven babies is born with BBLR.[3]

BBLR is considered as the main cause of infant mortality especially in the first month of live. Globally, 40-60% of infant mortality in the world is caused by BBLR.[4] A number of BBLR death is 35 times higher than babies with birth weight more than 2500 gram.[5] BBLR is the main cause of the second highest perinatal death in Indonesia after Intra Uterin Fetal Death (IUFD), it is 11,2%.[6]

Indonesia is one of the developed countries with a great number of mothers and infant mortalities. Previously, infant mortality was 110.000, yet, nowadays it becomes 280.000 caused by BBLR 15 per 1000 live born (KH).[7]

According to World Health Organization (WHO) that infant mortality rate in 2013 was 34 per 1000 live born caused by asphyxia, low birth weight baby, hypothermia and infection.[1]

One of Sustainable Development Goals (SDGs) targets in the third goals is in 2030, ketiga yaitu pada 2030, infant and babies' mortality can be ended and prevented, cooperating with all countries to decrease a number of Nasional Infant Mortality rate at least 12 per 1000 Live born (KH) and infant mortality rate 25 per 1000 live born [8]

According to Demographic and Indonesian Health Survey's data in 2012 that infant mortality rate in Indonesia within five periods (2007-2012) was 32 per 1000 live born and infant mortality 40 per 1000 live born. Meanwhile, AKB in 2012 was 34 per 1000 in which live born was increased compared to the data in 2010 with 26 per 1000 live born, as it is targeted that live born in 2015 will be 23 per 1000 neonatal period.[9] The result of inter-census population survey in 2015 that Infant Mortality Rate was 22.23 per 1000 live born, and one of its causes in Indonesia is Low Birth Weight with 10.2%.[6]

Low Birth Weight case in West Nusa Tenggara Province in 2016 decreased 0.2% if it is compared to the previous year, in which BBLR case in 2015 was 3,98 % then decreased to 3,96 % in 2016.[10]

In West Lombok Regency, infant mortality rate case has been decreasing for 5 years late. The infant mortality rate case in 2015 was 42, this data is lower than the previous years by 60 cases. The infant mortality cases caused by BBLR in 2016 was increase from 12 cases to 20 ones.[11]

Low Birth Weight has a risk of delaying in growth and development. It can be seen from physical growth, one of which is body length where BBLR body length at birth is ≤ 45 cm, it is lower than normal baby length which is 48 - 52 cm.[12,13,14]

One of the efforts to care BBLR which is proven simple, cheap, and highly recommended is Kangaroo Mother Care (KMC).[15] Some of the research results reveal that KMC can increase physical development one of which is body length. It is supported by a research conducted by Suman Rao P N (2008) showed that babies who were treated by KMC will increase their body length by 0,99 cm each week by giving KMC per day within 13 hours/day. It corresponds with a research conducted by Sangita (2016) showed that the group who was given KMC intervention for 1 week, there was an increase in body length by 0.99 cm, while for the control group, there was an increase by 0.70 cm.

Counselling is one of the ways to provide education about Kangaroo Care Method. Sofiyana and Noer (2013) explain that one of the health education methods to change behavior is counselling.

Counselling which is conducted within 4 times in a month with 30-60 minutes per session can increase knowledge from moderate to good, from moderate attitude to good, and poor behavior to good.

The case of Low Birth Weight in Hospital Patut Patuh Patju of West Lombok in 2017 was 16,25 % slightly increase from the previous year by 17,11 % with 27 rate cases of Low Birth Weight per month.[16]

Based on a survey conducted in Hospital Patut Patuh Patju of West Lombok, there was no Kangaroo care method counselling was given when at the time of discharge, so that it is important to do a research about "the effect of Kangaroo Counselling Care Method towards the increase of baby's body length for Low Birth Weight at Hospital Patut Patuh Patju of West Lombok Regency in 2018".

METHODE

This research used Quasi Experiment with Nonequivalent Control Group Design with Cross Sectional which aimed at finding out the effect of Kangaroo Counselling Care Method towards the increase of baby's body length for low birth weight at Hospital Patut Patuh Patju of West Lombok Regency in 2018.

This research was conducted on March to Mei in Hospital Patut Patuh Patju of West Lombok Regency to the respondents who meet the inclusion criteria. The sample consisted of 34 respondents and was divided into two groups, they were 19 Low Birth Weight as experimental group that was treated by using Kangaroo Counselling Care Method, and 15 Low Birth Weight as the control group that was given everyday baby counselling care. The researcher used level of significance p=0.05

The Low Birth Weight baby's body length was collected by reading the result of baby's body length using Lengght Board conducted in the research process and interview towards the respondents. The univariant aimed at describing the characteristics of each searched variable. Meanwhile, the bivariant analysis aimed to test the difference and test the effect of independent variable towards the dependent variable.

RESULT

Table 1. The Distribution of Respondents Based on Age.

Age	Intervention		Control		Total	
	n	%	n	%	N	%
<27 year	6	31,6	11	73,3	17	50
≥27 year	13	68,4	4	26,7	17	50
Total	19	100	15	100	34	100

Based on the table 1, the respondents' age between < 27 years old and ≥ 27 years old was same by 17 persons (50%), where the most respondents aged ≥ 27 years old in intervention group were 13 persons (68,4 %) compared with aged < 27 years old were 6 persons (31,6 %). Meanwhile, in control group, aged < 27 years old by 11 persons (73.3%) were more than aged ≥ 27 years old by 4 persons (26,7 %).

Tabel 2. The Distribution of Respondents Based on Education Level.

Education	Intervention		Control		Total	
	n	%	N	%	n	%
TS	1	5,3	1	6,7	2	5,9
SD	11	57,9	6	40	17	50
SMP	1	5,3	2	13,3	3	8,8
SMA	5	26,3	6	40	11	32,4
PT	1	5,3	0	0	1	2,9
Total	19	100	15	100	34	100

Based on the table 2, the education level was highly dominated by SD education level by 17 persons (50%), where 11 persons (57.9%) were in intervention group and 6 persons (40%) were in control group. While it was at least dominated by university education level by 1 person (2.9%) in intervention group.

Tabel 3. The Distribution of Respondents Based on Job

Job	Intervention		Control		Total	
	n	%	n	%	n	%
Jobless	18	94,7	14	93,3	32	94,1
Jobless	1	5,3	1	6,7	2	5,9
Total	19	100	15	100	34	100

Based on the Table 3, the respondents' job was more dominated by the jobless by 32 persons (94.1%), in which there was 18 persons (94.7%) in intervention, and there were 14 persons (93.3%) in control group. Compared with the working respondents consisted of 2 persons (5.9%), intervention or control group had 1 person each (5.9%).

Tabel 4. The Distribution of Respondents Based on Low Birth Weight Gender

Gender	Intervention		Control		Total	
	n	%	n	%	n	%
Male	6	31,6	9	93,3	15	44,1
Female	13	68,4	6	6,7	19	55,9
Total	19	100	15	100	34	100

Based on the table 4, it is concluded that there were more babies with female sex by 19 babies (55.9%), where there were 13 babies (68.4%) in intervention, and in control group was 6 babies (40%). Compared with male babies by 15 babies (44.1%), in which there were 6 babies (31.6%) in intervention and 9 babies (60%) in control group.

Tabel 5. BBLR Babies' Body Length Before and After Counselling

Body Length	**Mean**	**Max**	**Min**	**SD**
Intervention				
Before	47,26	48,00	46,00	0,73349
After	48,55	49,80	46,90	0,94714
Control				
Before	46,20	48,00	43,00	1,47358
After	47,21	49,50	43,90	1,57610

Based on the table 5, it was found that there were 19 BBLR babies in intervention group, and the result of the analysis found that babies' body length rate before conducting KMC counselling was 47,26 cm, with standard deviation score 0,7349, the lowest body length before the counselling was 46 cm and the highest body length before the counselling was 48 cm. Meanwhile, after KMC counselling was conducted within 2 weeks was 48,55 cm with standard deviation score 0,94714, the lowest body length after the counselling was 46.90 cm and the highest body length after the counselling was 49.80 cm.

There were 15 Low Birth Weight babies were found in control group, and the result of the analysis found that the babies' body length rate before conducting counselling was 46,20 cm, with standard deviation score 1,47358, the lowest body length before the counselling

was 43 cm, and the highest body length before the counselling was 48 cm. Meanwhile, after counselling was 47,21 cm with standard deviation score 1,57610, the lowest body length after the counselling was 43.90 cm and the highest body length after the counselling was 49.50 cm.

Tabel 6. The Analysis of the Effect of Kangaroo Counselling Care Method on Increasing Low Birth Weight Babies' Body Length

Group	n	Mean Rank	P value
Intervention	19	21,11	0,005
Control	15	12,93	

Based on the table 6, the result of calculation using Mann Whitney in SPSS computerizing system was 24.0. The result of the research found that statistical result test score was $p = 0,005 < \alpha = 0,05$, so, Ho is rejected, and Ha is accepted. Thus, it is concluded that there is a significant difference of body length between intervention group and control group, so that it is concluded that there is effect of Kangaroo Counselling Care Method on increasing Low Birth Weight babies' length.

Discussion

Respondents' Characteristics

Age

In this study, the respondents' age rate was between 17 and 42 years old which was dominated by 32 years old. The researcher divided the respondents' age into two groups; < 27 years old and ≥ 27 years old. The result of the research showed that the respondents' age in both groups were same, they are 50% each.

In intervention group, the respondents were dominated by ≥ 27 years old by 68.4 %. Respondents with more mature age level and strength of a person will be better at thinking and working, so that it can support the implementation of KMC.

It is correlated with Notoatmojo's (2010) that the more mature of a person's age, the level of his maturity and strength in his thinking and working will be better, it is caused by the soul experience which will affects his behavior.

In addition, motivation and strong intention is one of the factors which related to the implementation of PMK besides family and working environment support. The more mature of someone, the motivation level of a mother will be better. It is supported by Widyaningsih's (2010) research under the title "Mothers' motivation level towards Kangaroo care method". Most of the respondents were 36 years old, with strong motivation level was 18 respondents and none of them have low motivation.

Education

The respondents' education level in this research is varied started from uneducated, elementary school to university level. They are also categorized into five groups. The result of the research shows that most of the respondents have elementary school level (50%).

It is supported by the data found in NTB 2017 for West Lombok regency that female residents with 15 years old up that based on the completed education with the highest percentage is elementary school level by 30.10%.

The better someone's education level, the better mindset form will be, so that the respondents with good education level will have openminded with a new thing including KMC counselling. It is accordance with Soekidjo's (2003) statement that education is an

effort to transfer knowledge so that there will be an increasing positive behavior changing, and knowledge level will increase.[18]

Job

This research shows that most of the respondents do not work by 94,1%, so that 18 respondents in intervention group who did not get job had more time at home rather than mothers with job, so that they can do Kangaroo Care Method to their babies maximally.

It is in accordance with the statement that Job is an activity or an action that someone's does to get a living, or livelihood. People who are busy with their daily activity will have more time to have information because they will more interact with others rather than who do work or have an activity.[19]

Based on the research's result by Fitri Kurniawati (2012) that the majority of the respondents were housewife by 40 respondents (66,67%), private employees was 25%, and private sector was 8,30%. Where the buiser someone with his job, it will affect towards other jobs. So, if a mother who has given birth does a big deal of works, she will have less attention to her babies. And a jobless mother will have more time to care her babies twice higher than a mother who has a job.

Baby's Gender

Overall, the result of the research shows that the babies were dominated by female sex by 55,9 %. It related to the theory that proportion genesis of Low Birth Weight male babies is less (46.44%) than Low Birth Weight female babies (53,56%) and birth risk to the male babies with BBLR is 0,82 times less than giving birth for BBLR female babies.[20]

In addition, Mochamad Setyo (2011) stated that in Low Birth Weight case, female babies have more incident than male one. Ezugwu EC (2009) also revealed that 95 of 168 BBLR babies, were female. It is caused by the androgenic hormone stimulation or Y chromosome which brings the genetic materials that can increase male embryo growth. In the same pregnancy age, male embryo is heavier 5% and longer 1% than female sex and it is caused by the men's sex hormone and Y chromosome. It begins to appear at 24 weeks of pregnancy.

Body Length Before and After Counselling

The body length measurement of 34 babies were carried out at age of 2 days to a maximum of 3 days, then from the result of the data analysis, it was found that babies' body length average in the intervention group before KMC counselling was 47.26 cm.

Meanwhile, in the control group, the results of the analysis showed that the average body length before counselling was 46.20 cm. The babies' body length in the control group or intervention group, the shortest was 43 cm and the longest was 48 cm. The babies body length evaluation was carried out 2 weeks after counselling. The result of the babies' body length rate analysis found in intervention group after KMC counselling was 48.55 cm. While, in control group 47,21 cm.

The result of the research conducted by Silvia, et al., (2013) revealed that the measurement of the body length before doing KMC, the smallest body length was 40 cm, and the longest one was 46 cm with body length rate of 43 cm. The measurement of the body length after doing KMC, the smallest body length was 40 cm, and the longest one was 49 cm with body length rate of 44.1875 cm.

The data of babies' body length found was varied, it was caused by gender difference where the result of the research found showed that male baby's body length before counselling was around 46,73 cm and after counselling was 48,84 cm. While, female baby's body length before counselling was around 46,73 cm, and after counselling was 47,76 cm, with an increase in body length of male was 1.48 cm, while in female was 0.92 cm.

It shows that male baby is longer 1% than female baby. It is in accordance with a theory stated by Roesmary (1997) that male baby is higher 1% than female baby. It is because anatomically, the bones of the arms of male baby tends to be longer, bigger, and heavier as well as larger and denser muscle mass.

Male babies have subcutaneous fat, so that their shapes are more angular. In addition, the factors of birth body length were also affected towards an increase of babies' body length, babies who are born with longer body are expected to have increase as well.

An Analysis of the Effect of Kangaroo Counselling Care Method on Increasing BBLR Babies' Body Length

The result of the analysis using Mann Whitney Test that H_0 was rejected, and H_a accepted with significance level (p) 0,005 ($p<0,05$). It indicates that there is a significant effect Kangaroo Counselling Care Method towards the increase of babies' body length for low birth weight at Hospital Patut Patuh Patju of West Lombok Regency.

The result of this study is in line with a research conducted by Ramadona (2011) that the implementation of counselling increases the knowledge, attitudes, and behavior of patients in their care. Sunadi, (2012) also revealed that 71.0% of mothers who have BBLR babies after being given information about counselling had high knowledge and motivation about Kangaroo Care Method. Isna, et al., (2015) was also revealed that there are significant differences of mothers' ability to carry out Kangaroo care method before and after being given counselling. Counselling treatment can improve the mothers' ability to be better in applying Kangaroo care method, so, it must be established as a permanent component in standard operating procedures to care for babies with low birth weight. In addition, Astuti, (2002) mentioned that health education method with counselling (lecture) can increase knowledge after the post-test compared with knowledge in pre-test.

Based on result of the conducted research, it is known that by the intervention in the form of counselling, it can affect the increase of someone's knowledge of a certain thing and may also by one's attitude, culture and environment.Thus, by mothers' awareness, there will be attitude changing, it is whether mothers or family routinely do Kangaroo Care Method to their babies at home. It was found that the use of KMC monitoring stickers at home, most of the mothers routinely did PMK at home with an average of 60 minutes per day for their babies. Mubarak, (2007) supported that health education can change the level of knowledge level become better so that they behave as expected.However, to gain the effective result in the process of education, it is necessary to demonstrate and do an effective health education method. Counselling is an effective method to instill knowledge, motivation, and mothers' ability with their Low Birth Weight baby.[21]

The result of the research revealed that the mean deviation of body length babies before and after giving KMC counselling was 1.29 cm. While in control group, mean deviation of body length babies was 1.01 cm. Based on the curve growth published National Center for Health Statistics (NCHS), babies will have an increase in body length about 2.5 cm each month.[22] Theoretically, the evaluation of the increase of baby's length will be done when he is 1 month, but in this study, the evaluation was carried when the baby was 2 weeks old. In contrast with a research done by Gathwala G, et al., (2010) which showed that there was difference in BBLR babies' body length who were treated by using KMC method and not.

The Low Birth Weight babies' body length that was treated by KMC method increased 1.03 cm each week, while who were not treated by KMC method increased 0.74 cm per week. It is in line with a research conducted by Suman R, et al., (2008), and Sangita, (2016) that babies who treated by using KMC, their body length increased 0.99 cm each week with everyday KMC treatment 13 hours/day because they do KMC, the stronger the relationship

between mother and baby will be, even will be better if it is regularly done for up to 24 hours. There is an increase of body length for BBLR baby by 1.6 cm, Low Birth Weight baby was 1.8 cm, and very low birth weight baby was 1 cm.

The differences of the results from the research above, such as Gathwala G, et al., (2010), Suman R, et al., (2008), and Sangita, (2016), the supervision was conducted in the process of PMK implementation, and was evaluated after 1 week. Meanwhile, in this research, the supervision was not conducted in the process of PMK implementation at home so that that the researcher did not know whether the respondents did PMK correctly or not, but the strength of this research is the supervision was conducted by using PMK monitoring supervision stickers at home.

In addition, the length of the research also affects, in which this study was conducted within 2 weeks, meanwhile according to Wong, et al., (2008) that evaluation of body length increase is ideally conducted every 1 month.

Conclusion

The percentage of age between < 27 years old and ≥ 27 years old is same by 50% with the most education level was Elementary School (SD) by 50% and the most job characteristics; jobless by 94.1%. The percentage of the babies' gender in this study was mostly female by 55,9 %.The babies' body length before being given PMK counselling in the intervention group was 47.26 cm, and the control group was 46.20 cm. After being given PMK counselling to the intervention group, body length increased 48.55 cm and the control group was 47.21 cm. There is a significant effect of Kangaroo Counselling Method towards the increase of babies' body length with p=0.005.

Expression of Thanking

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