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The Effect of the Combination of Baby Massage With Boreh Rice Kencur Bima Against Baby Sleep Quality

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Abstract

Achieving the need for sleep is an effort that affects the baby's growth. Many millions of children suffer from growth and development problems. In Indonesia, babies who have cases of poor sleep quality wake up a lot at night. Rice kencur boreh is made from rice, and kencur has the benefit of providing warmth and comfort when applied to the body. The people of Bima used to use boreh rice kencur to maintain the health of their babies and make babies sleep soundly. This study aims to determine the effect of the combination of baby massage with rice kencur boreh on improving the quality of baby sleep. This research is a quasi-experimental design with a pre-post test with the control group. The study population in this study were infants aged 3-6 months. The sample consisted of 31 people with a treatment group of 16 people and a comparison group of 15 people-data analysis using Mann Whitney. The results showed an increase in the quality of infant sleep after infant massage with VCO and Boreh Beras Kencur, namely an increase of 3.38 ± 0.44 points. There was also an increase in the control group with average sleep quality of 2.93 ± 0.83 points. There was an effect of the combination of boreh rice kencur Bima on infant sleep quality.

Keywords: Boreh Rice Kencur; Baby Massage; Sleep Quality

INTRODUCTION

Achieving the need for sleep is an effort related to the baby's growth. Sleep is a stimulus for brain growth. About 75% of growth hormone is released when children sleep (Sukmawati and Imanah, 2020). Based on WHO data, more than hundreds of millions of children experience sleep disorders that affect growth and development from year to year. In Indonesia alone, more than 10% of children have problems with their sleep (Mariana and Sopiatun, 2020).

In NTB there are 103,122 babies, the number of babies in Mataram 8,839, West Lombok 13,797, Central Lombok 19,540, East Lombok 25,273, North Lombok 4,218, Sumbawa 8,738, West Sumbawa 3,302, Bima City 3,326, Bima Regency 10,433, and Dompu, 5,656 (Dinas Kesehatan Propinsi NTB, 2018). In the Bima Regency area, babies are 8,964 people from 11 Puskesmas. The Sape Health Center has the highest target number of babies, which is 1,073 people, followed by Woha Health Center in the second place with the most 950 people, the third place is the Monta Health Center with 897 people, and the fourth place is the Bolo Health Center, which is 889 people. Several problems occur in infants in the

working area of the Bolo Health Center, one of which is sleep disturbances. The total target for 2020 babies is 949 at the Bolo Health Centre (Puskesmas Bolo, 2021).

Based on a preliminary study in the PKM Bolo Working Area in February 2021, researchers surveyed mothers of babies. They found that most mothers said that their babies had trouble sleeping, and usually, they used rice kencur boreh as an alternative that could make their babies sleep soundly. Various ways have been done in today's life, both pharmacologically and non-pharmacologically.

One of the non-pharmacological ways to prevent baby sleep problems is with baby massage. Baby massage is a slow and gentle touch movement on all baby bodies starting from the baby's feet, stomach, chest, face, hands and back (Ariyanti *et al.*, 2019). Baby massage is a form of tactile stimulation. Touch stimulation is important in development. The sense of touch is the most advanced sensory at birth (Ifalahma, 2016).

Boreh is a mixture of spices or traditional medicinal products mashed as an external medicine. The function of the boreh is to warm the body, prevent colds, make blood circulation smooth, and relieve aches; the boreh is spread all over the body until it is half dry, after that massage it to clean the dried boreh (Sukmawati, Aniharyati and Widarti, 2019). Boreh rice kencur is Boreh which consists of kencur and rice. This boreh is made by mothers to spread on their children and clean with a wet cloth until clean. As a result, the body feels warm, and aches disappear and are believed to be able to make a good night's sleep (Asian Network for Scientific Information. and ., 2019).

Research results (Rahmawati, F 2018), about the effect of baby massage on baby's sleep quality proves that babies who are given baby massage are better than babies who are not given baby massage. In addition, the results of other studies on the effectiveness of boreh in postpartum mothers found that rice kencur boreh is good for infants or children to maintain warmth and avoid colds (Fatmawati, R., Hidayah, 2019).This study aimed to determine the effect of the combination of baby massage with rice kencur boreh on improving the quality of infant sleep.

METHODS

This research is a quasi-experimental design with a pre-post test with a control group and a purposive sampling technique with inclusion criteria. The ethical license has been approved by the Health Research Ethics Commission of the Mataram Health Polytechnic (No. LB.01.03/6/4171/2021). This research was conducted from May – to July 2021. The population in this study were infants aged 3-6 months in the Bolo Health Center Work Area, Bima Regency, NTB Province.

The number of samples is 34 people, and the sampling technique uses purposive sampling, which is a certain consideration made by the researchers themselves, based on the characteristics or characteristics of the population that have been known previously, using a minimum sample, but to prevent dropouts in the sample, add additional samples. 10% of the minimum sample is 30, which becomes 34 samples (Notoatmodjo, 2018). However, at the time of the research, 3 respondents dropped out due to 1 respondent moving and 2 respondents being sick, so they could not be continued as research samples. So the number of samples in this study obtained as many as 31 respondents. The case and control samples were divided by two from the number of respondents, namely the case sample as many as 16 respondents and the control sample as many as 15 respondents.

The sample used in this study was a sample determined when conducting research that met the inclusion criteria. Inclusion criteria in this study were infants aged 3-6 months, healthy infants and mothers of infants willing to be respondents and exclusion criteria were infants over 7 months, sick/allergic infants. Moreover, the baby's mother was not willing to be a respondent.

The infant massage and infant sleep quality instruments are questionnaire sheets and observation sheets. Univariate data analysis was the percentage, minimum, maximum, mean, SD and bivariate analysis performed using the Mann Whitney test.

RESULTS

Table 1. Characteristics of Babies

Baby Characteristics	Intervention		Control	
	N	%	N	%
Gender				
Male	9	56.25	5	33.3
Female	7	43.75	10	66.7
Age (Month)				
3 months	8	50	2	13,3
5 months	0	0	6	40
6 months	8	50	7	46,7

Based on Table 1, it was found that in the intervention group, the sexes of the most respondents were male, 9 infants (56.25%), the control group, the most respondents were female respondents, namely 10 infants (66.7%). In contrast, the highest age in the intervention group was infants aged 3 months and 6 months were 8 babies (50%); in the control group, the most were babies aged 6 months with 7 babies (46.7%).

Table 2. Baby Sleep Quality Before and After Baby Massage With VCO and Kencur Rice Boreh

Sleep Quality	Intervention				Control			
	Mean	Max	Min	SD	Mean	Max	Min	SD
Before	0.37	1.00	0.00	0.50	0.53	2.00	0.00	0.63
After	3.75	4.00	3.00	0.44	3.46	4.00	2.00	0.83

Table 2 shows an increase in the baby's sleep quality after baby massage with VCO and Boreh Beras Kencur by 3.38 ± 0.44 points. In comparison, there was also an increase in the control group with average sleep quality of 2.93 ± 0.83 points.

Table 3. Analysis of the Effect of Combination of Baby Massage with Boreh Rice Kencur on Baby Sleep Quality

	n	Median (Minimum-Maksimum)	p value
Intervention	16	4.0000 (3.00-4.00)	0.000
Control	15	0.0000 (0.00-2.00)	

Table 3 shows a significant difference in infant sleep quality between the group of infants who were given a baby massage and boreh rice kencur and baby massage and VCO with $p = 0.000$ ($p < 0.05$).

DISCUSSION

This research was conducted in Bima City on babies born with normal weight ranging from 3 months to 6 months. Each group consisted of mostly male infants as the intervention group and mostly female infants as the comparison group. The intervention carried out in this study was baby massage using Bima boreh which was rubbed all over the baby's body, and then measuring the baby's sleep quality after the intervention.

Previous studies have shown that the quality of infant sleep measured by sleep duration, first cycle sleep duration, percentage of rapid eye movement (REM) at the age of 4-5 months showed

no relationship with the baby's age or gender. At this age range, babies will sleep for 10-18 hours a day, with an average of 14 hours a day, babies wake up to feed only. Weight gain at the age of 6 months based on anthropometric measurements is better than the age of older babies because, on average, babies are still given exclusive breastfeeding (Joseph *et al.*, 2013; Ventura *et al.*, 2022).

The results of this study prove that in both groups, each experienced an increase in sleep quality before a baby massage with boreh rice kencur, namely 0.37, increased to 3.75 while the average sleep quality in the control group before being given VCO there was also an increase in the average quality of sleep from 0.53 to 3.46. The use of VCO in this study in the control group is a cream that is recommended for massage interventions, similar to the use of essential oil (Rosemarinus Officinalis L) because it has different properties in physical preparations, including dispersion and adhesion of the preparation to oil and water content (NR, 2019).

Improvements in infant sleep quality in this study included the length of time the baby was asleep at night, whether the baby was always awake, how long the baby was awake, and whether the baby looked fussy or often cried when he fell asleep. Monitoring the quality of sleep is important for parents so that the baby's brain development grows optimally. Previous research has shown that infant massage is a traditional intervention that is recommended, especially in intensive neonatal care, which is beneficial for improving sleep quality. Baby massage is also useful for managing stress for both mother and baby so that it increases the interaction between the two, which makes the baby not fussy at night (Van den Hoogen *et al.*, 2017).

Baby massage will be more effective when done by the mother herself; this bonding bond makes it easier for mother and baby to give each other a positive response between two. In this study, in both groups, each baby was massaged by his mother; for the convenience of mothers doing baby massage, they were previously provided with a pocketbook. Other studies have proven that baby massage effectively improves infant sleep quality, as evidenced by the respondents who experienced an increase in sleep quality; most (73.33%) of respondents had good sleep quality. In contrast, in this study, the improvement in infant sleep quality increased from an average score of 0.37 to an average of 3.75 (Sukmawati and Imanah, 2020; Pratiwi, 2021).

Baby sleep quality is a form of baby's adaptation to their environment that can affect their emotional and physical development. This need for sleep can concern parents to achieve optimal growth according to their age. Babies who are massaged will be able to sleep soundly, while their concentration power is fuller (Tang and Aras, 2018; Istikhomah, Kurniasari and Siswiyanti, 2020; Luh Emi Riska, 2021). In this study, the infant massage intervention group was also applied to the entire baby's body using rice kencur boreh, which the people of Bima NTB usually do call Bore Loi. after that, these two ingredients can be pureed to be mixed, then added water and can be directly smeared on the baby's body. The people believe they bore Loi of Bima to relieve complaints of aches, pains and pains throughout the body. Previous research has proven an effect of giving Bore LOI on feeling comfortable and relaxed after being given this scrub intervention on the respondent's body (Sukmawati, Aniharyati and Widarti, 2019).

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This baby massage intervention in the Bima community of West Nusa Tenggara is also often called Pe'e Massage, which is the massage of the Bima cultural tradition to prevent seizures in infants and is believed to increase body weight, but uses a finely ground spice scrub. In this study, the scrub used was kencur rice. This boreh of kencur rice rubbed all over the baby's body after the massage makes the baby feel comfortable and can sleep soundly. This boreh provides benefits for relaxation and keeps the baby warm, because the touch of baby massage with the content of boreh provides calm and warmth so that after a combination of baby massage with rice kencur boreh has a good influence in improving the quality of good sleep in babies (Jo, 2016; Kurniadi and Mardiatun, 2019).

The study results found that baby massage performed with a combination of giving kencur rice boreh after massage had a significant effect on improving the quality of infant sleep before and after the intervention. So baby massage conducted in this study can improve the quality of baby sleep. This increase in sleep quality is stimulated due to the release of the hormone serotonin, which can increase melatonin. This main neurotransmitter substance can stimulate a baby's sleep by inhibiting reticular activation and other brain activity. Other studies have proven that baby massage is scientifically proven to be effective in improving sleep quality in infants 0-12 months; in addition to improving sleep quality, Boreh or known as Parem in Balinese society, is also used as an external medicine to reduce pain, as evidenced in experimental research conducted in rats that this boreh is effective in reducing oedema in rat feet, namely as anti-inflammatory therapy (Adrianta, Putra and Sari, 2019; Yanti *et al.*, 2021).

Baby massage using boreh which is carried out on respondents, can be very useful for calm or comfort and maintain baby's warmth because the touch of baby massage with boreh content provides calm and warmth so that after the combination of baby massage with rice kencur boreh has a good influence in improving the quality of sleep good for babies. Baby massage therapy with this modification of boreh provides a sense of relaxation and a sense of warmth that causes postpartum mothers to improve their sleep quality in previous studies. This massage can provide a sense of relaxation due to the physiological effects of the hypothalamic response, which leads to an increase or decrease in arousal from the nervous system. This relaxation response explains the stress theory.

This relaxation reduces muscle tension due to the production of endorphins. Muscle tension is the opposite of the stress response to improve sleep patterns (Fatmawati and Hidayah, 2019). Other studies explain that boreh is a type of aromatherapy as a series of treatments to improve sleep quality (Kawabata, Hata and Aoki, 2020).

CONCLUSION

The characteristics of infants in the Bolo Health Center working area based on gender, the most in the intervention and control groups were 17 women (56.7%), the age of the babies in the intervention group were mostly infants aged 3 months and 6 months as many as 8 people (50%) while in the control group the most respondents were infants aged 6 months by 7 people (46.7%). The quality of baby's sleep before the combination of baby massage with VCO showed the average value of sleep quality was 0.53, and the combination of baby massage with rice kencur boreh got an average value of 0.37 points. After a combination of baby massage with VCO, the quality of the baby's sleep experienced a change with an average value of 2.93

points, and infants who used a combination of baby massage with boreh rice kencur experienced an average value increase of 3.38 points on sleep quality. The combination of baby massage with rice kencur boreh affects the baby's sleep quality (ρ value 0.000).

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