

The Effect of Baby Massage on The Sleep Duration of Infants Aged 6-12 Months

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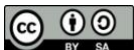
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ABSTRACT

Infancy is a golden period in infant growth and development, so it needs special attention. One of the factors that can affect a baby's growth and development is sleep and rest. Massage can help reduce muscle tension so that the benefits obtained by baby become more relaxed and sleep more soundly. The purpose of this study was to determine the effect of baby massage on the sleep duration of infants aged 6-12 months at Posyandu Cempaka, Karang Sari Village, Karangpawitan District, Garut Regency. This study uses a quasi-experimental study with a one-group pretest-posttest design. The population in this study was 35 infants aged 6-12 months. The sampling technique used was total sampling; 5 respondents were eliminated so the sample taken was 30 infants. The instrument used was a questionnaire that has been tested for validity and reliability. Data were analyzed by using Paired Samples Test. The average sleep duration for babies before being given a baby massage was 12.93 and the average duration for babies after being given a baby massage was 14.20. The results of the statistical test showed a p-value of $0.000 < 0.05$. There was an effect of baby massage on the sleep duration of infants aged 6-12 months. It is hoped that mothers can continue to massage their children by learning baby massage so that they can massage themselves at home regularly and routinely so that babies do not experience sleep disturbances and can grow and develop optimally.

Keywords: baby massage; sleep duration; infants

INTRODUCTION

Sleep disorders in babies are a form of problems faced by parents. Based on research by Yang et al., (2020) recorded about 33% of babies experience sleep problems. Research conducted by Hiscock (2012) in Melbourne Australia found that 32% of post-partum women reported repeated occurrences of sleep problems in their babies. The study illustrates that there are still many occurrences of sleep problems experienced by babies and these events can persist or repeat (Hiscock, 2012). In Indonesia quite a lot of babies who experience sleep problems, which is about 44.2% of babies experience sleep disorders such as often waking up at night. According to Sekartini (2010), with the number of respondents 285 babies, data obtained 51.3% of babies have sleep disorders, 42% of babies sleep at night less than 9 hours, and at night babies wake up more than 3 times with a wake of more than one hour.

The introduction of regular and sufficient sleep patterns is very important for the baby's needs to get enough benefits from sleeping at night and during the day so that he can be fit to move cheerfully the baby not only affects his physical development but also his attitude the next day. Babies who sleep enough without waking up often will be fitter and not easily fussy. Getting your baby to sleep enough with a regular pattern can help your baby achieve optimal growth and development. Stimulation given as a baby can be through massage which is a health care art that can be done alone in a family environment, cheap, comfortable, safe if done appropriately (Permata, 2017).

The quality of sleep is as a state, where the sleep that an individual undergoes produces fitness and freshness upon awakening. While the quality of sleep according to Hidayat (2016), is a person's satisfaction with sleep, so that a person does not show feelings of fatigue, easily aroused and restless, lethargic, and apathetic, blackness around the eyes, swollen eyelids, red conjunctiva, sore eyes, intermittent attention, headaches and often yawning or drowsiness. Good sleep quality seems to occur by itself there is no need to deal with it by not being able to rest or with anxiety and do not need to take any medication to experience it (Maryunani, 2010).

Babies with poor sleep quality will have a negative impact on their development such as decreased body immunity, babies become easily emotional and concentration decreases. Factors related to sleep duration in infants include activity, fatigue, environment, health conditions and fulfillment of nutrients (Mardiana et al, 2014). Babies who sleep enough without waking up often will be fitter and not easily fussy. Babies are said to have sleep disorders if at

night sleep less than 9 hours, wake up more than 3 times and wake up longer than 1 hour. During sleep babies look always fussy, cry, and have difficulty sleeping again (Sekartini, 2012). There is growing recognition that sleep disruption characterized by decreased sleep quantity and poor sleep quality negatively affects physical health, stress response, cognitive function, memory, and mood (Faraut et al. 2012 as cited in Hadad, Dennis, Shah, Streemler, 2019).

Handling sleep problems in babies can be done by doing a massage. Massage as a skill already has a very long history. Massage is the oldest activity used by humans to ward off fatigue and stress. At the beginning of its appearance, massage is believed to be one of the best ways to relieve fatigue, stress, stiff muscles, and aches. Baby massage of course comes hand in hand with the birth of the human ability to perform massage therapy. Because baby massage is also interpreted as a touch of comfortable communication between mother and baby. Baby massage is an expression of affection between parents and children through a touch of the skin. The touch and hug of a mother are basic needs of the baby. Where all of that has a tremendous impact on the development of the baby. The touch presented in gentle massages for babies is an important stimulation in the growth and development of children. Children who get a directed and regular stimulus will develop faster compared to children who lack or do not get a stimulus (Dwijayanti, 2019).

Baby massage is one type of stimulation that will stimulate the development of the structure and function of the work of cells in the brain (Riksani, 2014). A gentle massage will help relax the muscles so that the baby becomes calm and sleeps soundly. Soft touch in babies is a means of a beautiful bond between the baby and his parents and when massaged on the baby can cause the baby to sleep soundly and at the time of waking up the concentration power will be fuller (Roesli, 2013).

The government in this case has paid attention to infants through the role of midwives themselves as stated in the decree of the Minister of Health of the Republic of Indonesia Number 369 / MENKES / SK / III / 2007 concerning the standards of the midwife profession which states that midwives have the authority to carry out monitoring and stimulate for child growth and development. One form of stimulation of growth and development that has been done is baby massage (Ministry of Health, 2007).

Data on babies who experience sleep problems in Garut Regency is not yet known with certainty the number. Based on preliminary studies conducted in Karang Sari Village, Karangpawitan Health Center Work Area, Karangpawitan District obtained data that there were 8 posyandu with the number of babies aged 6-12 months in March 2021 which was 26 babies after a survey of Posyandu groups in Karang Sari Village Puskesmas Karangpawitan obtained the number of babies who had sleep disorders amounted to 11 babies or about 42.3% of 26 babies. From these results, the baby lacks sleep because of sleep disorders complained about by the baby's parents such as often waking up at night, often crying, and being fussy which results in a lack of sleep fulfillment in the baby. From the results of interviews with midwives at the Karangpawitan Health Center that in the Karangpawitan health center there are no services for a baby massage while in Posyandu Karang Sari Village the interest of the baby's parents in massage is very high. The results of interviews with 10 baby mothers asking the question "do you know about baby massage?", as many as 7 people (70%) said they have long known about baby massage, if the baby has difficulty sleeping, is fussy, and crying they bring the baby to *paraji* for massage because so far the mother has not understood about the correct technique of massaging the baby so afraid to do the baby massage themselves. Based on the data above, researchers want to know more about "The Effect of Baby Massage on the sleep duration of infants aged 6-12 Months in Posyandu Cempaka Karang Sari Village, Karangpawitan District, Garut Regency in 2021". The objective is to determine the effect of baby massage on the duration of infants aged 6-12 months in Posyandu Cempaka Karang Sari Village, Karangpawitan District, Garut Regency in 2021.

METHOD

This type of research is pre-experimental with one group pretest-posttest approach. The population of this study is all infants aged 6-12 months di Posyandu Cempaka Karang Sari Village Karangpawitan District Garut Regency in 2021 which consisted of 35 babies. The sample was 30 babies selected by purposive sampling with inclusion criteria; the baby must not be in a sick state or has a certain disease, the baby's mother is willing to have a massage, Ibu baby is willing the baby to be used as a respondent. This research will be carried out in Posyandu Cempaka Karang Sari Village, Karangpawitan District, Garut Regency in July 2021. The independent variable in this study was baby massage while the dependent variable of this study was the quality of infant sleep. The instrument used by this study is the Standard Operating Procedure (SOP) of baby massage as a guide in providing massage treatment to babies while determining the length of sleep of the baby was done by to asking directly how many hours the baby nap and how many hours at night. Data were analyzed by univariate and bivariate methods.

RESULT

Table 1. Distribution of Respondent Frequency Based on The Sleep Duration of Infants Aged 6-12 Months Before and After Being Given Baby Massage at Posyandu Cempaka Karang Sari Village Working Area of Karangpawitan Health Center Garut Regency in 2021

	Experimental Group				Mean Difference
	N	Min	Max	Mean	
Pre-test	30	11.0	15.0	12.933	1.267
Post-test	30	12.0	16.0	14.200	

Based on table 1. It showed that of the 30 respondents before being given the intervention in the form of baby massage obtained the lowest sleep duration of 11.0 hours, the longest duration of 15.0 hours, and the average duration of infant sleep of 12.93 hours. After being given a baby massage obtained the lowest baby sleep duration of 12.0 hours, the duration of infant sleep at most 16.0 hours and the average duration of infant sleep is 14.20 with an average sleep duration difference of 1.267 hours.

Table 2. The Effect of Baby Massage on The Sleep Duration of Infants Aged 6-12 months di Posyandu Cempaka Karang Sari Village Karangpawitan District Garut Regency in 2021

	Mean	SD	p	N
Pre-test	12.933	1.0483	0.000	30
Post-test	14.200	1.0222		

Based on table 2. According to the results of the statistical test obtained a value of $p = 0.000 < 0.05$, it can be concluded that there is a difference in the average sleep duration of respondents before and after being given a baby massage, so it can be concluded that there is an influence of baby massage on the duration of infant sleep aged 6-12 months di Posyandu Cempaka Karang Sari Village Karangpawitan District Garut tahun 2021.

DISCUSSION

Based on the results of the study obtained the lowest infant sleep duration of 11.0 hours, the longest duration of 15.0 hours, and the average duration of infant sleep 12,933 hours. Sleep is an unconscious state that is relatively more responsive to internal stimuli. The difference between sleep and other unconscious states is that the sleep state cycles are predictable and lack of response to external stimuli. The brain gradually becomes less responsive to visual excitation, auditory and other environmental stimuli. Sleep is considered a passive state that begins with sensorics input although active initiation mechanisms also affect the state of sleep (Nugraheni, 2017).

Sleep plays an important role in increasing the baby's immune system to infection. If the sleep is disturbed, the level of white blood cells in the body will decrease and the effectiveness of the baby's immune system also decreases. So that the baby is easily sick, and his growth will be disturbed. Babies who sleep less have stunted physical growth, compared to babies who sleep enough. This is because during sleep the baby's physical growth will be encouraged, and is closely related to weight gain, height, and general physical health (Khasanah, 2017).

In addition to helping the growth process, sleep also helps the development of psychic emotions, cognitive, consolidation of experiences, and intelligence. Therefore, need for sleep in babies according to their age needs to get attention from the family so that later the baby can achieve optimal growth and development (Wong, 2011).

The introduction of regular and sufficient sleep patterns is very important for the baby's needs to get enough benefits from sleeping at night and during the day so that he can be fit to move cheerfully; the baby not only affects his physical development but also his attitude the next day. Babies who sleep enough without waking up often will be fitter and not easily fussy. Getting your baby to sleep enough with a regular pattern can help your baby achieve optimal growth and development. Stimulation given as a baby can be through massage which is an art of health care that can be done alone in a family environment, cheap, comfortable, safe if done appropriately (Permata, 2017). Babies are said to have sleep disorders if at night sleep less than 9 hours, wake up more than 3 times and wake up longer than 1 hour. During sleep the baby looks always fussy, crying and has difficulty sleeping again (Nudesti, 2020).

Given the importance of adequate sleep time for the development of the baby, the need for sleep must be completely met so as not to adversely affect his development. The adequacy of the baby's sleep time not only affects

physical development but also his attitude the next day. Babies who sleep enough without waking up often will be fitter and not easily fussy.

Based on the results of the study after being given a baby massage obtained the lowest baby sleep duration of 12.0 hours, the duration of infant sleep was at most 16.0 hours, and the average duration of infant sleep of 14.20 with an average sleep duration difference of 1.267 hours. Babies with poor sleep time will have a negative impact on their development such as decreased body immunity, babies easily becoming emotions, and concentration decreases. Factors related to sleep duration in infants include activity, fatigue, environment, health conditions, and fulfillment of nutrition (Yulian, Trane & Ginting, 2021). Babies who sleep enough without waking up often will be fitter and not easily fussy. Babies are said to have sleep disorders if at night sleep less than 9 hours, wake up more than 3 times and wake up longer than 1 hour. During sleep, the baby looks always fussy, cries, and has difficulty sleeping again (Sekartini, 2012).

The results of this study are in line with research conducted by Istikomah et al., (2019) with the title Effect of Infant Massage on The Length of Sleep of Infants Aged 3-6 Months in Jemawan Village, Jatinom District, Klaten Regency. The results showed that the baby's sleep before the massage was less than normal for as many as 18 babies and the rest had a normal sleep duration of 14 babies. The length of sleep of the baby after being given massage treatment the majority became normal as many as 27 babies and had a sleep duration of more than 15 hours in as many as 5 babies.

Currently, various therapies have been developed, both pharmacological and non-pharmacological therapies. According to Prasadja (2009) in Roesli (2016), one of the non-pharmacological therapies to overcome infant sleep problems is baby massage. Research conducted by Tiffany Field at the Touch Research Institute in America showed that children who were massaged for 2x15 minutes every week, slept better so that at the time of waking up the concentration was better than before being given massage.

Massage as a skill already has a very long history. Massage is the oldest activity used by humans to ward off fatigue and stress. At the beginning of its appearance, massage is believed to be one of the best ways to relieve fatigue, stress, stiff muscles, and aches. Baby massage of course comes hand in hand with the birth of the human ability to perform massage therapy. Because baby massage is also interpreted as a touch of comfortable communication between mother and baby. Baby massage is an expression of affection between parents and children through a touch of the skin. The touch and hug of a mother are basic needs of the baby. Where all of that has a tremendous impact on the development of the baby. The touch presented in gentle massages for babies is an important stimulation in the growth and development of children. Children who get a directed and regular stimulus will develop faster compared to children who lack or do not get a stimulus (Munlidian, 2017).

A baby's instincts respond to the mother's touch as a form of protection, attention, and expression of love. We can see the baby who gets the touch looks so comfortable and calm. The higher the frequency of touch, the closer the inner connection established between the baby and those closest to him. The touch presented to the baby in the form of a gentle massage should be done by the people closest to the baby such as Mother, Father, Grandpa, or Grandma. The lack of information and knowledge of parents about massage, makes many parents consider massage is not a form of scientific therapy as well as natural for babies. Most mothers think massage is only necessary when their child has the flu and cold (Warsini & Nugraini, 2016).

Babies whose muscles are stimulated by massage or massage will be comfortable and sleepy. Most babies will sleep for a long time once the massage is done. In addition to long, the baby seems to sleep asleep and not fussy like before, this indicates that the baby feels calm after a massage. When the baby sleeps, then when he wakes up will become fit, so it becomes a factor that supports the concentration and work of the baby's brain (Khasanah, 2017). According to Roesli (2013), baby massage is a massage that is done closer to fine swabs or rebate stimuli (tactile) carried out on the surface of the skin, manipulation of tissues or organs of the body aims to produce effects on muscle nerves, and respiratory system and facilitate blood circulation.

Baby massage was done for 15-30 minutes using oil. Baby massage will make the baby sleep more soundly and increase alertness (alertness) or concentration. This is because massage can change brain waves. This change occurs by lowering alpha waves and increasing beta and theta waves, which can be proven using EEG (electroencephalogram) (Roesli, 2013).

After giving a massage, there are already many babies who have a normal sleep duration, and some have a long sleep duration of more than 15 hours. In infants who have a quantity of sleep of more than 15 hours is only an excess of a few minutes and does not harm the baby. At most, it has an excess of 50 minutes and at least an excess of 10 minutes. According to Roesli (2016), the baby who is massaged will fall asleep more soundly, while at the time of waking up the concentration will be fuller. Researchers assume that the baby's need for time or duration of sleep can be improved in many ways, one of which is through baby massage. Baby massage will make the baby sleep more soundly

and improve concentration. This is because massage can change brain waves. The adequacy of the baby's sleep time not only affects physical development but also his attitude the next day. Babies who sleep enough without waking up often will be fitter and not easily fussy.

Based on the results of statistical tests obtained a value of $p = 0.000 < 0.05$, it can be concluded that there is a difference in the average sleep duration of respondents before and after being given a baby massage, so it can be concluded that there is an influence of baby massage on the duration of infant sleep aged 6-12 months di Posyandu Cempaka Karang Sari Village Karangpawitan District Garut tahun 2021.

The results above illustrate that baby massage is very influential in increasing the baby's sleep duration, this shows that massaged babies can increase the production of absorption enzymes, increase the neurotransmitter serotonin, and increase immunity and result in changes in brain waves that cause the baby to fall asleep more soundly. That's why the baby's sleep patterns will be better after getting a massage.

When the baby is asleep there is growth and maturation in brain cells and there is an increase in the production of growth hormones that have a role in the growth and development of the baby physically and psychically. Therefore, it is important that the quality and quantity of a baby's sleep be prepared to be optimal. Assessment of sleep quality in infants can be seen from whether the baby wakes up on one sleep cycle. Through baby massage, the quality and quantity of baby sleep increase. This happens because through massage the baby will stimulate the production of endorphins hormone which causes the baby to become relaxed and calm (Aswitami, 2009). Similar research conducted by (Battaya et al., 2020) states that there is an influence of infant massage on sleep quality and improved gross motor development in infants aged 1-3 months. This is because there is an increase in activity in the neurotransmitter serotonin produced after the massage so there is a decrease in the adrenaline hormone that makes the baby calm and relaxed. According to research (Shofa & Greece, 2014) babies who are not massaged have less quality and quantity of sleep, so it is easier to fuss and easily wake up at night. This of course affects the baby's sleep length which is less than optimal and has an effect on the growth and development of the baby.

These results are similar to research conducted by Mardiana & Martini (2014) with the title Effect of Infant Massage on The Quantity of Infant Sleep Aged 3-6 Months obtained the result that ada the effect of baby massage on the quantity of infant sleep aged 3-6 months. This result is also similar to research conducted by Tang & Aras (2018) obtained results on the influence of baby massage on the quality of infant sleep. Supported also by the results of research conducted by Warsini and Nugraini (2018) with the title Effect of Baby Massage on Infant Sleep Duration in Duwet Village, Wonosari District, Klaten Regency with the results of the study it is known that in the group of babies who were given massage acts had a higher average (15.90 hours/day) than the average sleep quantity of the baby group who were not massaged (13.90 hours/day). The conclusion of this study is that there is an influence of baby massage on the length of sleep of the baby.

This is in accordance with Roesli's opinion (2013) that massage can increase serotonin levels which will produce melatonin which plays a role in sleep and makes sleep longer and deeper at night. Serotonin will also increase the capacity of receptor cells that bind to glucocorticoids (adrenaline, a stress hormone). This process causes a decrease in levels of the hormone adrenaline (stress hormone) so that babies who are given massage treatment will appear calmer and less fussy. Massage also increases the mechanism of absorption of food by vagus nervus so that the baby's appetite also increases.

According to researchers, the importance of sleep time for the development of babies, then the need for sleep must be met so as not to adversely affect their growth and development. One way that can meet the baby's sleep needs is by massaging the baby. When the baby is massaged will increase serotonin secretion which will suppress the activity of the reticular activating system and will result in drowsiness. Given the many benefits of sleep for babies, baby massage done regularly and regularly can be used as an alternative to increasing the length of sleep for babies.

CONCLUSION

The average baby's sleep was aged 6-12 months before being given a baby massage of 12.93 hours at Posyandu Cempaka Karang Sari Village Working Area of Karangpawitan Health Center Garut Regency in 2021. The average baby sleeps aged 6-12 months before being given a baby massage of 14.20 hours at Posyandu Cempaka Karang Sari Village, Karangpawitan Health Center Work Area, Garut Regency in 2021. There was an effect of baby massage on the increasing sleep duration among infants aged 6-12 months in Posyandu Cempaka Karang Sari Village, Karangpawitan Health Center Working Area, Garut Regency in 2021 with a value of $p=0.000$. It is hoped that this research can be implemented by health workers, especially midwives to provide health services to infants aged 6-12 months by performing baby massages and baby growth and development. The results of this study can increase

experience and knowledge and can apply that, especially in terms of conducting research so that the next research can be better.

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