



The Effect of Baby Massage on Sleep Quality of Baby Aged 1-3 Months

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Abstract

Sleep quality is the quality or physiological state obtained during sleep. One way to improve sleep quality is baby massage. Baby massage is a touch therapy or direct contact with the body that can provide a feeling of security and comfort to the baby. This study aims to determine the effect of infant massage on the sleep quality of infants aged 1-3 months. This study used a quasi-experimental method with a one group pre test post test design. The sampling technique in this study was non-probability sampling with purposive sampling method. The results of this study indicate that there is an effect of infant massage on the sleep quality of infants aged 1-3 months in the working area of UPT Puskesmas Watampone, with the Wilcoxon test results obtained a significant number or probability value (0.001) much lower than the significant standard of 0.05 or ($p < \alpha$), then H_0 data is rejected and H_a is accepted, which means there is an effect of infant massage on the sleep quality of infants aged 1-3 months in the work area of the Task Implementation Unit (UPT) of the Watampone Health Center, Bone Regency.

Introduction

Infancy is a golden period and a critical period in growth and development, because at this time babies are very sensitive to their surroundings. Infancy is very fast and can not be repeated. Babies can grow and develop healthily if their basic needs are met. One of the basic needs of babies is the need for sharpening which is also called the need for stimulation. Stimulation needs to be given early to stimulate and develop as early as possible the sensory, emotional and cognitive abilities of the baby/child by doing baby massage (Rosidi & Purnamasari, 2021).

At the age of 3 months and above, babies begin to be able to receive stimulation and touch. The baby's muscle strength will increase as the baby gets older. At this age, development is very rapid, so regular and continuous baby massage therapy can help the baby's growth and development (Kusumastuti et al., 2016).

Baby massage is a touch therapy or direct contact with the body that can provide a feeling of security and comfort to the baby. If baby massage is done regularly, it will increase catecholamine hormones (epinephrine and norepinephrine) which can stimulate growth and development (Irianti & Karlinah, 2021).

Sleep quality is the quality or physiological state obtained during sleep. Good sleep quality is characterized by a sufficient number of hours of sleep for the baby, the baby can fall asleep easily at night, is fit when he wakes up, and is not fussy (Rambe, 2019).

Poor quality sleep, such as at night the baby sleeps less than 9 hours, wakes up more than 3 times and the baby wakes up for more than 1 hour, during sleep the baby looks always fussy,

crying and has difficulty falling back asleep. The quality of a baby's sleep does not only affect physical development, but also affects his attitude the next day (Fauziah & Wijayanti, 2018)

Most sleep problems in infants are caused by age-appropriate sleep duration (deficient in quantity) or disruption and fragmentation of sleep (poor sleep quality). Poor sleep quality results in disturbances in the balance of physiology, psychology, cognitive function and baby's movements. Babies who experience sleep disturbances are more susceptible to illness because of the decreased immune system of the baby. Besides that, growth disturbances also occur, such as reduced body weight, physical development, the baby looks tired and fussy and has an impact on the growth and development of the baby's brain, such as reduced comprehension and memory (Dewi et al., 2020).

Based on data from the World Health Organization (WHO) in 2018 in the journal Pediatrics, it was recorded that around 40% of babies experience sleep problems. In Indonesia, there are quite a lot of babies who experience sleep problems, namely around 44.2% who experience sleep disturbances such as frequent awakenings at night (Dewi et al., 2020).

The prevalence of sleep problems in Indonesian children aged 0–36 months is quite high (31%). The need for sleep is not only seen from the aspect of quantity, but the quality. With good quality sleep, the baby's growth and development can be achieved optimally (Enim et al., 2022).

Based on data from the Bone Regency Health Office, in 2020 there will be 13,343 babies aged 0-1 years (99.93%) and in 2021 there will be a decrease in babies aged 0-1 years with a total of 13,109 (96.85%)

Methods

This type of research uses a quasi-experimental method with a one group pre test post test design. The population of this study is all infants aged 1-3 months in the working area of UPT Puskesmas Watampone. The research was carried out in the working area of UPT Puskesmas Watampone, Bone Regency. In this study, 2 variables were used, namely the independent variable (infant massage) and the dependent variable (sleep quality in infants aged 1-3 months). The sampling technique in this study was non-probability sampling with purposive sampling method. Data obtained by using questionnaires and interviews. Data processing is carried out starting from editing, coding, data entry, data processing and data claning. Data analysis was carried out univariately to present an overview of the distribution of all variables and bivariate analysis to see the relationship between variables. The research hypothesis is the effect of infant massage on the sleep quality of infants aged 1-3 months.

Results and Discussion

Table 1. Univariate Number of samples (n) = 32

Variable	N	%
Age		
1 Month	5	15.6
2 Months	10	31.3
3 Months	17	53.1
	32	100.0
Gender		
Man	16	50.0
Woman	16	50.0
	32	100.0

Data source: Secondary Data 2022

Table 2. Bivariate The Effect of Baby Massage on the Quality of Sleep for Babies Aged 0-3 Months

The quality of sleep of babies aged 1-3 months before the baby massage is done

No	Pre test	Frequency	Percentage (%)
1	Good	12	37.5
2	Enough	15	46.9
3	Less	5	15.6
Total		32	100.0

The quality of sleep of babies aged 1-3 months after a baby massage

No	Post test	Frequency	Percentage (%)
1	Good	26	81.3
2	Enough	6	18.8
3	Less	0	0
Total		32	100.0

Quality-of-sleep as for babies aged 1-3 months before and after baby massage

No	Sleep Quality of Babies Aged 1-3 Months	Baby Massage			
		Before		After	
		N	%	N	%
1	Good	12	37.5	26	81.3
2	Enough	15	46.9	6	18.8
3	Less	5	15.6	0	0
Total		32	100.0	32	100.0
<i>Wilcoxon test p(0.001) < α (0.05)</i>					

Age

Based on table 4.1 it shows that of the 32 respondents who were studied in the working area of the UPT Puskesmas Watampone, the frequency of respondents based on the age of the majority of respondents aged 3 months was 17 people (53.1%), 2 months old were 10 people (31.3%) and 1 month old as many as 5 people (15.6%).

Age is one of the factors that affect the quality of sleep in infants, the older the age, the less sleep quality. Newborns up to 2 months old will sleep about 15-17 hours (Yustika, 2021). Newborns will sleep for 16-20 hours a day. Entering the age of 2-3 months the baby has started to sleep more at night than during the day, because at the age of more than 3 months, sleep patterns will start to look like adults. As the baby gets older, the hours of sleep also decrease. The total amount of sleep time for babies aged 0-6 months ranges from 13-15 hours a day (Fauziah & Wijayanti, 2018).

According to (Aco Tang, 2018) that the development of a baby's sleep is also related to the age and maturity of the brain, the total amount of sleep needed will be followed by a decrease in the proportion of Rapid Eyes Movement (REM) and non-REM. REM sleep is associated with changes in cerebral blood flow, increased cortical activity, increased oxygen consumption and epinephrine release. This synchronization aids memory retention as the brain sifts through stored information about the day's activities.

Gender

Based on table 4.2, it shows that of the 32 respondents who were studied in the working area of the UPT Puskesmas Watampone, the number of male and female sexes was the same. Male sex as many as 16 people (50.0%) and female sex as many as 16 people (50.0%).

Based on the results of observations made in the field, gender is also a factor that influences sleep quality in infants. Where baby boys tend to be more active than baby girls so baby boys tend to have poor sleep quality due to fatigue due to more activity than baby girls.

This agrees with research Yustika (2021) that gender can affect the need for baby massage which affects the quality of baby's night sleep, because baby boys tend to be more active than baby girls so baby boys need more baby massage therapy, because baby boys are more at risk of experiencing physical fatigue and injury muscle than girls.

Babies with male gender tend to be more active in physical activity during the day which causes the baby's sleep time to decrease and fatigue easily. Generally, babies with male gender are more active and attractive so that the possibility of experiencing muscle fatigue and injury is higher than female babies (Sulistyowati & Yudha, 2022).

The quality of sleep of babies aged 1-3 months before the baby massage is done

Based on table 4.3, it shows that the quality of sleep for babies aged 1-3 months before the baby massage was carried out, some of the respondents had poor sleep quality, 5 people (15.6%), enough for 15 people (46.9%) and good for as many as 12 people (37.5%). The results of this study indicate that there is a concordance between the observations and the existing theory. According to research Almuslim (2022) shows that before the baby massage, most of the respondents had poor sleep quality, namely 67.3%, sufficient sleep quality 32.7% and no one had good sleep quality, it can be concluded that there is an effect of baby massage on the sleep quality of infants aged 0 -6 months in the Children's Polyclinic, Bangli General Hospital, significantly with a p-value of 0.000 where the p-value $< \alpha$ (0.05).

Babies are said to have sleep disturbances if they sleep less than 9 hours a night, wake up more than 3 times, and wake up more than 1 hour, while sleeping, the baby always looks fussy, cries, and has trouble going back to sleep (Yustika, 2021). The quality of sleep has an important role in increasing the baby's immune system and can affect the growth and development of the baby. Because of the importance of the need for sleep, the need for sleep in infants must be completely fulfilled so that it does not adversely affect their growth and development.

This is in accordance with the opinion Dewi et al. (2020) that the body of a baby who has sleep disturbances is more susceptible to illness because of the decreased resistance of the baby's body. Besides that, there are also growth disturbances such as reduced body weight, in physical development the baby looks tired and fussy and has an impact on the growth and development of the baby's brain such as reduced comprehension and memory.

This research is in line with research Pratiwi (2021) which shows that the sleep quality of infants aged 1-6 months before the baby massage was carried out, most of the respondents had poor sleep quality, namely 11 (31.4%) decreased to 2 respondents (5.7) and after the baby massage, the quality of the baby's sleep the age of 1-6 months increased where most of the respondents had good sleep quality, namely 3 respondents (8.6%) to 20 respondents (57.2%). Through the Wilcoxon statistical test, a significant number (0.000) was obtained, a lower standard of significance than 0.05, meaning that there is an effect of infant massage on the sleep quality of infants aged 1-6 months at Diddie Mom and Baby Care.

This research is also in line with research Anggraini & Sari (2020) that the sleep quality of infants aged 0-6 months before being given a baby massage was more than 50%, namely 67% of infants were in the category of poor sleep quality and the least with good sleep quality, namely only 13%. the sleep quality of infants aged 0-6 months after being given a baby massage was more than 50% of infants, namely 60% in the category of good sleep quality and the least with poor sleep quality, namely only 10%. There is an effect of baby massage on the sleep quality of infants aged 0-6 months.

Quality of sleep for babies aged 1-3 months after baby massage

Based on table 4.4, it shows that the quality of sleep for babies aged 1-3 months after baby massage, the quality of sleep is sufficient for 6 people (18.8%) and good for as many as 26 people (81.3%). Based on the results of observations made in the field, it was found that babies who had been given treatment in the form of baby massage had better sleep quality characterized by sleeping more than 9 hours at night, waking up <3 times and not being fussy easily.

Because of the importance of the quality of sleep for the development of the baby, the need for sleep must really be met so that it does not adversely affect the growth and development of the baby. One way that can be done to meet these needs is to do baby massage. Baby massage is a therapy or health care art that has long been known by humans and is a treatment that has been practiced since ancient times. Baby massage is a health treatment in the form of touch therapy with certain techniques given to babies, so that treatment and therapy can be achieved (Utami, 2021).

Based on the results of observations made in the field, it shows that baby massage is a non-pharmacological therapy that has many benefits, one of which is maintaining the baby's immune system and providing a sense of security and comfort to the baby. Babies whose muscles are stimulated by massage will feel comfortable.

According to research results Utami (2021) that baby massage has many positive advantages, because it can increase body weight, increase baby's growth and development, increase baby's concentration, make the bounding strong, cause a feeling of comfort, and can stimulate blood circulation.

This research is in line with research (Aco Tang, 2018) which shows the pretest results of the baby's sleep quality before being given a baby massage, it shows that the quality of sleep is in the fairly good category, which is the most dominant, namely 60%, while the least is the quality of sleep in the bad category, namely 6.7%. While the results of the post test for the quality of sleep for babies after being given baby massage 6 times where the most dominant sleep quality was the good category (73.3%) and no babies had bad sleep quality (0%). The results of statistical data analysis using the Wilcoxon test between pretest and posttest showed that there was an effect of giving baby massage on the quality of baby's sleep with $p = 0.003$.

This research is also in line with research (Simanungkalit, 2019) which shows a P-Value of 0.032 ($P\text{-Value} < \alpha 0.05$) which means there is a significant difference between massage and baby's sleep pattern. It can be concluded that there is an effect of baby massage on sleep patterns of infants aged 0-6 months at the Terawan Health Center in 2019.

This research is in line with research Kalsum (2021) that based on the results of the Chi-Square Tests statistical test, the value of $p = 0.003$, and Odds Ratio = 3.33 where $p < \alpha$ ($\alpha = 0.05$), it can be concluded that H_a is accepted and H_o is rejected, which means that there is an effect of baby massage on improving baby sleep patterns at PMB Suryanti Makassar in 2019.

Baby massage massager against the quality of sleep of babies aged 1-3 months

Based on table 4.5, it shows that the quality of sleep for babies aged 1-3 months before the baby massage was carried out, most of the respondents had sufficient sleep quality, namely 15 people (46.9%), the quality of sleep for babies aged 1-3 months after the baby massage, most of the respondents had quality sleep. sleep well as many as 26 people (81.3%). In this study, based on the analysis using the Wilcoxon statistical test, calculations were carried out to determine whether there was an influence between the independent variables and related variables.

Based on the SPSS output and the Wilcoxon test results obtained a significant number or probability value (0.001) is much lower than the significant standard of 0.05 or ($p < \alpha$), then H_0 data is rejected and H_a is accepted which means there is an effect of infant massage on sleep quality Infants Aged 1-3 Months in the Working Area of UPT Puskesmas Watampone, Bone Regency.

Because of the importance of quality sleep for the development of babies, their sleep needs must really be fulfilled so as not to adversely affect the growth and development of the baby. One way that can be done to meet these needs is to do baby massage. Baby massage is a massage that is done with gentle strokes on the surface of the baby's skin, done by using the hands which aims to produce an effect on the nerves, muscles, respiratory system and blood circulation. Massage is an art of health care and medicine that is practiced since centuries (Bruno, 2019).

Massage stimulation for babies can be done for 15 minutes with movements that can be done non-sequentially and can be stopped before all the series are finished if the baby doesn't want it. Each movement is performed 6 times (Setiawandari, 2020).

Baby massage with a massage duration of 15 minutes is enough to show the benefits of massage such as the baby looks calm, comfortable and easy to fall asleep soundly. A sound sleep really supports the growth and development of the baby. Babies who are massaged 2 x 15 minutes per week for 1 month will provide deeper and more focused sleep results than before the massage (Yanti et al., 2021).

The duration of the baby waking up at night is much less after the massage. Based on research Saddiyah Rangkuti (2021) that babies after massage showed an increase in sleep quality. This is because massage can have a positive effect on the baby's health. The effect of this baby massage action is to control stress hormones, so that the baby under study has effects such as falling asleep easily and making the baby feel comfortable. Gentle massage will help relieve muscle tension so that the baby calms down and falls asleep.

Based on the results of observations from the research conducted, it shows that babies have better sleep quality after being given an intervention in the form of massage. This is in accordance with research conducted by Tang, A. (2018) that babies who have been massaged show an increase in sleep quality which is characterized by longer sleep duration, namely 15-18 hours per day, smiling when awakened, time to put the baby to sleep <15 minutes up to 30 minutes, the baby is sound asleep, the frequency of awakening at night is <3 times and sweating during sleep.

This research is in line with several previous studies, namely research from Sukmawati & Nur Imanah, (2020) entitled The Effectiveness of Baby Massage on Increasing the Quality of Baby Sleep. Based on the results of the study, it was found that there was an increase in the quality of sleep for babies after the baby massage, namely that initially 60% had poor sleep quality before the baby massage increased to 73.33% the quality of baby sleep became good after the massage. The Wilcoxon test results show that the p-value is 0.034 where the p-value $< \alpha$ (0.05) so that H_0 is rejected and H_1 is accepted, which means that baby massage is effective in improving the quality of baby's sleep.

This research is also in line with research Almuslim (2022) which states that there is a significant effect of baby massage on the sleep quality of infants aged 0-6 months at the Children's Polyclinic, Bangli General Hospital with a p-value of 0.000 where the p-value $< \alpha$ (0.05), then H_0 is rejected and H_a received, that is, there is an effect of baby massage on the sleep quality of babies aged 0-6 months.

Conclusion

Based on the results of the research discussion on the Effect of Infant Massage on the Sleep Quality of Infants Aged 1-3 Months, it can be concluded that there is an effect of infant massage on the sleep quality of infants aged 1-3 months based on the results of the Wilcoxon test obtained a significant number or probability value (0.001) far significantly lower than 0.05 or ($p < \alpha$), then H_0 data is rejected and H_a is accepted, which means that there is an effect of baby massage on the sleep quality of infants aged 1-3 months in the working area of UPT Puskesmas Watampone, Bone Regency.

Suggestion

For Further Researchers

For further research, it is better to use a sample with a larger number, giving massage can be done by the researcher himself so that the massage is done the same as one another. Further research can also be carried out not only by assessing the quality of the baby's sleep but also by assessing the baby's weight or baby's development.

For Education

Be a benchmark and reference for new researchers as learning and provision to strengthen the theory that there is an effect of baby massage on the quality of baby sleep.

For Health Workers

It is hoped that it is necessary to develop promotion and education about baby massage to the public, especially parents, so that it can improve the quality of sleep for babies. This can also be done by conducting counseling about baby massage

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