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The Effect of Baby Massage on Body Weight and Sleep Quality of Babies Aged 3-6 Months

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Abstract:
Midwives have the authority to monitor and stimulate the growth and development of babies and children. One form of growth and development stimulation carried out is baby massage. Some of the benefits of baby massage include increasing appetite and sleeping better. This study aims to determine the effect of baby massage on increasing the weight and sleep quality of babies aged 3-6 months. The design used in this research is quasi-experimental. Of the 32 babies, 16 were in the experimental group who received treatment, namely being given baby massage, and 16 were in the control group who were not treated. Research results show 16 respondents received massage treatment from test results of Paired T Test obtained a value <0.001, which means there is an effect of baby massage on the weight of babies aged 3-6 months at Griya Apressa in 2023. Research results: In the experimental group given massage treatment from 16 respondents, test results Wilcoxon Signed Rank Test Asymp value is obtained. Sig. 0,000, which means that baby massage influences the sleep quality of babies aged 3-6 months. Conclusion: Baby massages influence the weight and sleep quality of babies aged 3-6 months. It is hoped that further research will develop this research so that more variables are studied on the benefits of baby massage.

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INTRODUCTION

Children are individuals who experience various developmental changes from infancy to adolescence. During their development, children have physical, cognitive, self-concept, coping patterns, and social behavior (Kurniyawan et al., 2023). Children's growth and development are very important and must be taken seriously from an early age. However, this is often ignored by health workers and parents who currently or usually focus more on handling when their child is sick. Many things must be recognized and done to optimize children's growth and development from an early age so that there are no deviations or delays that are certainly not expected (Harahap, 2019).

Sleep is one of the most important processes for humans. During sleep, a recovery process occurs, which is useful for returning the human condition to its original state; the tired body will become refreshed (Pratiwi et al., 2022). Sleep disorders in babies are a problem faced by parents because they can affect the emotions and sense of comfort felt by the baby. When a baby has stable and comfortable emotions, he usually has good physical growth because it will be easier for him to provide food and communicate with, so that the incoming information can enrich his knowledge, make him more creative, calmer, and so on. There are several things parents can do

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to manage a baby's emotions, from the time the baby is in the womb to after birth. Suppose the mother allows her emotions to explode, become angry, afraid, sad, or even too happy. In that case, it will affect the baby's psychological growth because she also feels what the mother feels (Abdurrahman, 2015).

Many studies show that babies need early stimulation in various body parts and sensory organs to help them adjust to their new environment. In this case, the government has paid attention to babies through the role of midwives themselves, which is stated in the Decree of the Minister of Health of the Republic of Indonesia Number 28 of 2017 concerning Midwife Professional Standards, which states that midwives have the authority to monitor and stimulate the growth and development of babies and children. Baby massage is one form of growth and development stimulation (Amru et al., 2022).

This baby massage can be categorized as an application of tactile stimulation because, in baby massage, there are elements of touch in the form of affection, attention, sound or speech, eye gaze, movement, or massage. This stimulation can stimulate the development of the structure and function of brain cells. Currently, there is a lot of research that states that regular baby massage has many benefits, both physical and emotional. Some of the benefits of baby massage include increasing appetite, increasing the benefits of exclusive breastfeeding, increasing appetite, increasing body resistance (immunity), making sleep better, and being able to foster attachment between parents and children.

In Marni's (2019) research, it was found that respondents aged 2-12 months, where at the age of 6 months, the baby was given MPASI, which is a complementary food for breast milk given to babies who have reached the age of 6 months, which is the baby's right to get adequate nutritional intake for their age. Judging from the background description above regarding the problem of baby weight, researchers are interested in researching "The Effect of Baby Massage on Increasing the Weight and Sleep Quality of Babies Aged 3-6 Months at Griya Apressa, Tangerang Regency in 2023".

METHOD

The design used in this research is quasi-experimental. According to Sugiyono (2019), a quasi-experimental design is not really an experiment because external variables still influence the formation of the independent variable. This study is the only one that can test hypotheses regarding causal relationships. The purpose of quasi-experimental research is to obtain information that estimates the information that can be obtained with actual experiments (Setiadi, 2013). In this design, research subjects were placed in the control group, and the experimental group was not randomly assigned. Only the experts who received treatment were given, and both groups were given a pretest and posttest.

The population is all research subjects or objects under study in the research area (Arikunto, 2013). The population in this study consisted of 32 babies aged 3-6 months. The sample is a portion or representative of the population studied (Arikunto, 2013).

The sampling technique in this research is total sampling. According to Sugiyono (2017), total sampling is a technique for determining samples when all population members are used as samples. So, the sample in this study was 32 babies aged 3-6 months. A total of 32 babies were divided into two groups, each with 16 babies in each group. Next, the researcher carries out sampling by assessing the sample to be selected according to the appropriate criteria for the research topic.

This research will be carried out at Griya Apressa Pasarkemis, Tangerang Regency. The reason for selecting this research location was due to the availability of adequate research samples. Research instruments are tools used by researchers to make it easier for them to carry out data collection tasks (Arikunto, 2013). The research instruments used in this study were a general data questionnaire sheet for respondents, a weight gain data sheet, and a sleep quality questionnaire.

RESULT

Univariate Analysis

Table 1. Average Increase in Body Weight in the Control Group and Experimental Group

Group		Difference Mean	Maximum	Minimum
Control	Pretest-Posttest	0.038	0.2	0
Experimental	Pretest-Posttest	0.706	1.7	0.3

Based on Table 1, it is known that of the 32 research respondents in the control group, the average value for increasing body weight in the control group was 0.038 kg, with a minimum increase in body weight of 0 kg and a maximum increase in body weight of 0.2 kg, while in the experimental group, the value obtained the average increase in body weight was 0.706 kg, with a minimum increase in body weight of 0.3 kg and a maximum increase in body weight of 1.7 kg.

Table 2. Average Sleep Quality Scores in the Control Group and Experimental Group

Group		Mean	Maximum	Minimum	Std.Deviation
Control	Pretest	9.63	14	3	3.575
	Posttest	8.88	14	3	4.129
Experimental	Pretest	10.44	15	3	4.211
	Posttest	1.75	3	1	0.775

Based on Table 2, it is known that of the 32 research respondents in the control group, the pre-test had an average sleep quality score of 9.63, a maximum score of 14 and a minimum score of 3, while in the post-test the control group had an average sleep quality score of 8.88. with a maximum score of 14 and a minimum score of 3. The experimental group in the pre-test obtained an average sleep quality score of 10.44, a maximum score of 15, and a minimum score of 3. In contrast, in the post-test, the experimental group obtained an average sleep quality score of 1.75 with a maximum value of 3 and a minimum value of 1.

Bivariate Analysis

Table 3. The Effect of Baby Massage on the Weight of Babies Aged 3-6 Months in Griya Apressa in 2023

Group	Mean	Std Deviation	Sig. (2-tailed)
Pretest and posttest score in control group	-0.0312	0.0704	0.096
Pretest and posttest score in experimental group	-0.7062	0.4057	0.000

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Table 3. shows the values of the p-value in the control group, which was not given treatment for the pre-test and post-test of 16 test respondents. The p-value obtained was 0.096 > 0.05, which means there was no influence in the research.

In the experimental group, massage treatment was given 5 times (2 times in 1 week) for pre-test and post-test from 16 respondents. The paired T Test obtained a value of 0.000, which means that baby massage has an influence on the weight of babies aged 3-6 months at Griya Apressa in 2023.

Table 4. The Effect of Baby Massage on the Sleep Quality of Babies Aged 3-6 Months in Griya Apressa in 2023

Group	Sig. (2-tailed)
Pretest and posttest score in control group	0.000
Pretest and posttest score in experimental group	0.000

Table 4. shows the Sig value. (2-tailed) in the control group who were not given treatment for the pre-test and post-test of 16 test respondents Paired T Test obtained Sig. 0.000, which means there is an influence in the research.

In the experimental group, massage treatment was given five times (2 times in 1 week) for pre-test and post-test from 16 respondents. Wilcoxon Signed Rank Test Asymp value is obtained. Sig. 0,000, which means baby massage influences the sleep quality of babies aged 3-6 months at Griya Apressa in 2023.

DISCUSSION

Based on the research results, it was found that 11 respondents in the group who were not given treatment (control group) did not experience an increase in body weight, and five respondents in the group who were not given treatment (control group) experienced a rise in body weight. In the group that was given the treatment (group experiment), all 16 respondents experienced increased body weight. This indicates that baby massage influences the baby's weight.

Baby massage is touch therapy performed on babies, which can guarantee continuous body contact, maintain a feeling of security for the baby, and strengthen the bond of affection between parents and their children. Baby massage is a stimulus from outside the baby that is useful for increasing the baby's weight and can also play a role in the child's physical growth and emotional development (Sulung et al., 2014). Massaged babies experience increased levels of absorption enzymes and insulin so that absorption of food essence improves. So, the baby becomes hungry quickly and breastfeeds more often, increasing breast milk production (Suparyanto, 2011).

According to Hidayat (2008), weight gain in children in the first year of life if the child receives good nutrition, from birth to the first six months of age, is every 140-200 grams. The baby's weight will increase at the end of the first six months of age. Meanwhile, at 6-12 months, weight gain is only around 85-400 grams. Body weight will increase by three times birth weight in the first year. Body weight is the most important anthropometric measurement used in examining newborns (neonates). From infancy to toddlerhood, body weight is used to see the rate of physical growth and nutrition, except for clinical abnormalities such as dehydration, ascites, adena, and other abnormalities. Besides that, body weight can be used to calculate drug and food doses (Irva et al., 2014).

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Researchers assume that weight gain is caused by the nutrition the baby gets. Weight gain after baby massage occurs because it is done regularly and with good nutritional patterns. Baby massage is a stimulus from outside the baby that is useful for increasing the baby's weight.

Based on research results that show value. Sig. (2-tailed) In the control group who were not given treatment for the pre-test and post-test of 16 test respondents, a paired T-Test Sig value was obtained. 0.000, which means there is an influence in the research. In the experimental group, massage treatment was given 5 times (2 times in 1 week) for pre-test and post-test from 16 respondents. Wilcoxon Signed Rank Test Sig value obtained. 0.000 < 0.05, which means there is an influence of baby massage on the sleep quality of babies aged 3-6 months at Griya Apressa in 2023

Sleep quality is a certain quality or physiological state that a person gets while sleeping, which can restore body processes that occur when a person wakes up. If sleep quality is good, the body's physiological functions (such as brain cells) have returned to normal after waking up (Delaune and Ladner, 2011). Poor sleep patterns will disrupt the body's physiological and psychological balance. Physiological impacts include decreased daily activities, unstable vital signs, decreased endurance, and constant fatigue (Kurniyawan et al., 2022). The quality of a baby's sleep affects physical development and attitude the next day. Babies who get enough sleep but don't wake up often will be healthier and less fussy and active after waking up (Permata, 2017).

Results of other research by Nurjanah et al. (2022) showed that 30 respondents had poor sleep quality before having a baby massage with rose essential oil. Meanwhile, after baby massage with rose essentials, there were no babies aged 3-6 months with poor sleep quality (0%), then there were five babies (16.7%) with adequate sleep quality, and 25 babies (83.3%) %) with good sleep quality.

Researchers assume that baby massage is useful for relaxation because it has a calming effect and relaxes muscles, so it can improve the quality of sleep in babies according to their needs to achieve optimal growth and development. Improved sleep quality in babies is due to increased serotonin levels from massage. Serotonin is the main transmitter substance that accompanies the formation of sleep by suppressing the activation of the reticular activation system and other brain activities. Serotonin, which is synthesized from the amino acid tryptophan, will be converted into 5-hydroxytryptophan (5HTP) and N-acetyl serotonin, which ultimately turns into melatonin. Massage can stimulate the release of the sleep hormone (melatonin), improving the baby's sleep quality (Nurjanah et al., 2022).

In carrying out this research, there were several limitations experienced by researchers, which can be used as factors that other researchers must consider in researching to be better because this research has many shortcomings and limitations that need to be corrected. Furthermore. Several limitations in this research include (1) There are still few respondents to be used as research respondents, (2) There are not many variables studied, and (3) Respondents still have minimal knowledge about the benefits of baby massage.

CONCLUSION

It is known that in the control group, five respondents experienced weight gain, and 11 respondents did not experience weight gain. In the experimental group, all 16 respondents experienced increased body weight. It is known that the control group's sleep quality score in the post test had a greater value, namely 8.88, compared to the sleep quality score in the experimental group, namely 1.75. This means the experimental group had good sleep quality after the baby massage. There is an effect of baby massage on the weight of babies aged 3-6 months at Griya

Apressa in 2023, and there is an influence of baby massage on the sleep quality of babies aged 3-6 months at Griya Apressa in 2023.

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CONFLICT OF INTEREST

There is no conflict of interest in conducting this research.

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