THE EFFECT OF BABY MASSAGE ON BABY GROWTH IN HUTA HOLBUNG VILLAGE, ANGKOLA MUARATAIS DISTRICT, DISTRICT SOUTH TAPANULI

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ABSTRACT

Data from the Central Statistics Agency for North Sumatra Province (2020), the live birth rate is 292,875 babies, seeing the high number of live births in babies it is very important to provide a stimulus during the golden age so that there is no developmental delay. The purpose of this study was to determine the effect of baby massage on infant growth in Huta Holbung Village, Angkola Muaratais District, South Tapanuli Regency. This type of research is Pre Experimental Designs with one group pretest-posttest design. The study was conducted in Huta Holbung Village, carried out from March to June 2021. The population was all infants aged 1-12 months in Huta Holbung Village with a sample of 30 infants, of which 15 were the intervention group and 15 were the control group. Using purposive sampling technique. Data analysis used bivariate analysis with independent statistical test T-test. The average baby weight in the experimental group before the massage was done was 4560 grams and the average after the massage was 5350 grams, which means an increase in body weight of 17.32%, while in the control group the average weight at the beginning of the study was 4556 grams and the average body weight at the end of the study was 5170 grams, which means an increase in body weight of 13.48%. The test results obtained t count 6.221, (p = 0.000), t table 1.753 with a significance of 5%. Because t count is greater than t table (6,221 > 1,753). There is a significant effect of baby massage on the growth of infants aged 0-3 months in Huta Holbung Village, Angkola Muaratis District, South Tapanuli Regency in 2021.

***Keywords** : Baby Massage, Baby Growth, Infant*

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INTRODUCTION

The period of infant growth and development is a golden period as well as a critical period of a person's development, namely at the age of 0-12 months. It is said to be the golden age because infancy is very short and cannot be repeated. It is said to be a critical period because at this time babies are very sensitive to the environment and need good nutrition and stimulation for their growth and development.[1-2]

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Growth and development in infants cannot be separated from the concept of growth and development. Growth is a physical change and an increase in the size of the body parts of an individual, each of which is different, while development is the improvement in abilities, skills, and more complex body functions in gross motor skills, fine motor skills, speech and language, as well as socialization and independence that owned by individuals to adapt to the environment.[3]

The quality of a baby's intelligence at this time is a determinant of the quality of human resources in the future. To prepare quality human resources in the future, babies need to be prepared so that babies can grow and develop as optimally as possible according to their abilities. Infant development will be optimal if since the baby gets enough attention and developmental stimulation. According to the World Healthy Organization (WHO) 2017, globally, around 20-40% of infants aged 0-2 years experience delays in the development process. The prevalence of child development problems in various developed and developing countries including America is 12-16%, Argentina 22% and Hong Kong 23%. Several studies that have been evaluated have an impact on failure and even shorten life.[3]

Judging from data and information from the Central Statistics Agency of North Sumatra Province (2020), the live birth rate is 292,875 babies, seeing the high live birth rate in babies it is very important to provide a stimulus during the golden age so that there is no developmental delay. Giving a stimulus to the baby after birth has a very important effect on the development of motor skills and social adaptation in the period of infant development to adulthood. In child development, stimulation is a basic need. Stimulation plays a very important role in increasing the growth and development of babies to be able to develop optimally. In addition, stimulation given regularly can stimulate the development of brain cells and will strengthen the connections between nerves that have been formed, automatically brain function will get better.[4]

Stimulation or stimulation that is good for children can be given by parents for the development of their maximum potential. Factors related to child growth and development are adequate nutrition, a supportive family environment is the basis for child development. In addition, from a personal perspective, children can be

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given stimulation, one form of stimulation that is commonly done by parents for babies is tactile stimulation in the form of baby massage. The government, in this regard, has paid attention to babies through the role of the midwife, which is stated in the Decree of the Minister of Health of the Republic of Indonesia Number 369/MENKES/SK/III/2007 concerning Midwifery Professional Standards stating that midwives have the authority to carry out monitoring and stimulate the growth and development of infants and children. . One form of growth and development stimulation that has been carried out so far is baby massage.[1-2]

Massage is one of the oldest methods of treatment in the world. Massage includes the art of health care and medicine that is able to relax joints that are too stiff and unite the organs of the body with strong rubbing. Massage therapy is not only used in salons and spas, but also in various hospitals and clinics. health care center. Currently, massage techniques have been widely used for health and weight gain in infants. Experts at the Medical School of the University of Miami since 1986 have researched the benefits of baby massage and it is proven that the weight development of premature babies who are massaged also experience a weight gain of 20-40% compared to babies who are not massaged.[5]

Research related to infant massage, among others, research by Jin Jing et al (2007) found that infants who were given baby massage and exercise, grew and developed faster than babies who were not given massage and exercise. Meanwhile, research conducted by Merineherta (2009) found that there was an effect of baby massage on increasing baby weight, namely that there was a significant difference in the increase in babies who did massage much better than babies who did not do massage. From all existing research, it is concluded that baby massage is one way to help the process of growth and development of children as well as a bounding attachment between mother and child.[6]

Phenomena that occur in society today are still many children who experience delays in their growth and development. This phenomenon occurs because many parents do not understand the importance of the process and stages of growth and development in their children. Based on the above background, researchers are interested and feel interested in researching how the Effect of Baby Massage on Infant Growth in Huta

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MATERIAL AND METHOD

The type of research used in this research was Pre Experimental Designs with a one group pretest-posttest design. Where measurements were taken before doing the treatment (pretest), then the treatment was carried out, namely the act of baby massage and then after being given the treatment, the measurement was carried out again (posttest). To find out the difference before and after baby massage. The research was conducted in Huta Holbung Village, Angkola Muaratais District, South Tapanuli Regency, North Sumatra.

This research was conducted from March to June 2021. The population in this study were all infants aged 1-12 months in Huta Holbung Village, Angkola Muaratais District, South Tapanuli Regency. The sample in this study were 30 infants aged 1-12 months who were recorded in the register book of Huta Holbung Public Health Center. Where 15 as the intervention group and 15 as the control group. Sampling was carried out using purposive sampling technique, namely by taking a minimum sample of 15 subjects per group where experimental research with experimental control had a minimum sample of 10-20 respondents per group. Data analysis used Univariate and Bivariate analysis, data testing was carried out using the Independent T-test statistical test

RESULT

Based on research conducted in Huta Holbung Village on "The Effect of Baby Massage on Baby Growth in Huta Holbung Village, Angkola District, South Tapanuli Regency". Respondents in this study were all infants aged 0-3 months in Huta Holbung Village, totaling 30 infants who were divided into 2 groups, 15 infants in the massage group (experimental group) and 15 infants in the non-massage group (control group).

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Table 1 Frequency Distribution of Respondents' Characteristics of Experimental Groups by Age in Months

Age	Frequency	Percentage
0 month	2	13.33%
1 month	2	13,33%
2 month	5	33,34%
3 month	6	40%
Total	15	100%

Based on the frequency distribution of the characteristics of the experimental group respondents by age in months, it shows that the majority of respondents are 3 months old with a total of 6 babies.

Table 2 Frequency Distribution of Control Group Respondents Characteristics Based on Age in Months

Age	Frequency	Percentage
0 bulan	2	13,33%
1 bulan	2	13,33%
2 bulan	5	33,34%
3 bulan	6	40%
Jumlah	15	100%

Based on the frequency distribution of the control group respondents' characteristics by age in months, it shows that the majority of respondents are 3 months old with a total of 6 babies.

Table 3. Frequency Distribution of Respondents' Characteristics of Experimental Groups Based on Body Weight Before Massage

Weight	Frequency	Percentage
2010-3000	2	13,33%
3010-4000	2	13.33%
4010-5000	6	40%
5010-6000	5	33,34%
Jumlah	15	100%

Based on the frequency distribution of the characteristics of the experimental group respondents based on body weight before massage, it shows that the majority of respondents weigh between 4010-5000 grams with a total of 6 babies.

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Table 4 Frequency Distribution of Control Group Respondents Characteristics Based on Body Weight at the Beginning of the Study

Weight	Frequency	Percentage
2010-3000	1	6,67%
3010-4000	3	20%
4010-5000	5	33,33%
5010-6000	6	40
Jumlah	15	100%

Shows that the majority of respondents weigh between 5010-6000 grams with a total of 6 babies.

Table 5 Frequency Distribution of Respondents' Characteristics of Experimental Group Based on Body Weight After massage

Weight	Frequency	Percentage
3010-4000 gram	2	13,34%
4010-5000 gram	3	20%
5010-6000 gram	5	30,30%
6010-7000 gram	5	30,30%
Jumlah	15	100%

The frequency distribution of the experimental group respondents' characteristics based on body weight after massage shows that the majority of respondents weigh between 5010-6000 grams with a total of 5 babies and weigh between 6010-7000 grams with a total of 5 babies.

Table 6. Frequency Distribution of Control Group Respondents Characteristics Based on Body Weight at the End of the Study

Weight	Frequency	Percentage
3010-4000 gram	2	13,34%
4010-5000 gram	3	20%
5010-6000 gram	6	40%
6010-7000 gram	4	26,67%
Jumlah	15	100%

The characteristics of the control group respondents based on body weight at the end of the study showed that the majority of respondents weighed between 5010-6000 grams with a total of 6 babies.

An overview of the average baby weight before and after massage in the experimental group and control group

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Table 7. Frequency distribution of the average baby weight before and after massage in the experimental group and control group

Class	Average Body Weight (grams)	
	Before	After
Experimental Group	4560	5350
Control Group	4556	5170

Based on the frequency distribution of the average baby weight before and after massage in the experimental group and the control group, it shows that the average baby weight in the experimental group before massage is 4560 grams and the average after massage is 5350 grams, while in infants the control group the average body weight at the beginning of the study was 4556 grams and the average body weight at the end of the study was 5170 grams.

Table 8. Distribution of the Average Frequency of Infant Weight Gain in the Experiment Group and Control Group

Class	Average Weight Gain	Percentage
Experimental Group	790	17,32%
Control Group	613	13,48%

Based on the frequency distribution of the average weight gain of infants in the experimental group and the control group, the average weight gain of infants in the experimental group was 790 grams and the average weight gain of infants in the control group was 613 grams. So that it can be seen that the average weight gain of infants in the experimental group was 790 grams and the control group average was 613 grams. This illustrates the difference in weight gain of infants in the experimental group with the control group of infants aged 0-3 months.

Table 9. Paired Samples Test

	Mean	95% Confidence Interval of the Difference		t	Sig (2-tailed)
		Lower	Upper		
Experimental baby weight gain – control baby weight gain	176.667	115.763	237.571	6.221	.000

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The test results obtained t count 6.221, (p = 0.000), t table 1.753 with a significance of 5%. Because t arithmetic is greater than t table (6.221 > 1.753) and p <0.05, Ho is rejected and Ha is accepted. This means that there is an effect of baby massage on weight gain of infants aged 0-3 months.

DISCUSSION

Based on the frequency distribution in table 1 and table 2 it shows that the majority of respondents in this study were 3 months old with a total of 12 babies. Based on the frequency distribution in table 3 and table 4 shows that the majority of respondents in this study at the beginning of the study weighed between 4010-6000 grams with a total of 22 babies. Meanwhile, based on the frequency distribution in table 4.5 and table 4.6, it shows that the majority of respondents in this study at the end of the study weighed between 5010-6000 grams with a total of 10 babies. Based on the frequency distribution in table 4.7, it can be seen that the average baby weight in the experimental group before the massage was done was 4560 grams and the average after massage was 5350 grams, while in the control group the average weight at the beginning of the study was 4556 grams and the average body weight at the end of the study was 5170 grams.

The difference in the average weight gain of infants in the experimental group with the control group Based on the frequency distribution in table 4.8, it can be seen that the average increase in infant weight in the experimental group was 790 grams and the average increase in infant weight in the control group was 613 grams. From the primary data with a ratio scale in the experimental group, the lowest value was 650 grams and the highest value was 1000 grams with an average value of 790 grams. While in the control group the lowest value was 450 grams and the highest value was 700 grams with an average value of 613 grams.

The value of data analysis using the Kolmogorov-Smirnov test shows the results with the calculated t value (6,221) and t table (1,753) with sig.(2-tailed) 0.000 or p value less than 0.05. Because the value of t count is greater than t table (6.221>1.753) and p <0.05, Ho is rejected and Ha is accepted. This means that there is a significant difference in average weight gain between the experimental group and the control group, that the

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experimental group respondents' average weight gain is higher than the control group. This significant difference in average weight gain occurred because the experimental group respondents were given massage once a week, while the control group was not massaged.

The results of this study are in accordance with the theory put forward by Roesli (2008) which says that one of the benefits of baby massage is to increase baby's weight and baby massage can have positive biochemical and physical effects. Baby massage causes an increase in vagus nerve activity and will stimulate digestive hormones including insulin and gastrin. Insulin plays a role in metabolism, causing an increase in carbohydrate metabolism, glycogen storage, fatty acid synthesis, amino acid uptake, protein synthesis. So insulin is an important anabolic hormone that acts on various tissues including liver, fat and muscle. Increased insulin and gastrin can stimulate digestive function so that the absorption of food juices becomes better. Better absorption of food will cause the baby to be hungry faster and therefore the baby will suckle more often.[7-8]

CONCLUSION

There was a significant effect of baby massage on the growth of infants aged 0-3 months in Huta Holbung Village, Angkola Muaratis District, South Tapanuli Regency in 2021. The average weight of infants in the experimental group before the massage was carried out was 4560 grams and the average after the massage was 5350 grams, which means an increase in body weight of 17.32%, while in the control group infants the average weight in at the beginning of the study was 4556 grams and the average body weight at the end of the study was 5170 grams, which means an increase in body weight of 13.48%.

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