



THE INFLUENCE OF INFANT MASSAGE ON WEIGHT GAIN IN BABIES AGED 1-6 MONTHS

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ABSTRACT	Keywords
Massage is the oldest method of treatment in the world. Massage encompasses both healthcare and therapy. There are many benefits obtained from performing infant massage, one of which is the improvement of infant weight gain. One of the issues concerning the growth and development of toddlers in Kutai Kartanegara, East Kalimantan, is the prevalence of underweight toddlers at 17.5% and wasted toddlers at 9.0%. The aim of this study is to analyze the influence of infant massage classes on infant weight gain. The research design is a quasi-experiment with a Two Group Pretest Posttest design. The research subjects are divided into two groups: the control group and the treatment group, and both pretest and posttest measurements are conducted. Based on the results of the t-test using paired t-test analysis, the significance value is $p=0.000$ ($p<0.05$). This indicates that there is an influence of infant massage classes for infants aged 1-6 months on weight gain. The average increase in infant weight after the intervention is 5200 grams. There is an influence of infant massage on infant weight gain at PMB Andi Herawati in the year 2023.	Infant massage, Weight gain, infants aged 1-6 months

INTRODUCTION

Based on the results of the Indonesian Nutritional Status Study, the national prevalence of underweight toddlers (Weight for Age $<-2SD$) is 17%, and the prevalence of wasted toddlers (Weight for Length/Height $<-2SD$) is 7.1%. In East Kalimantan Province, the prevalence of underweight toddlers is 16.2%, while the prevalence of wasted toddlers is 8.1%. In the Kutai Kartanegara district, the prevalence of underweight toddlers is 17.5%, and the prevalence of wasted toddlers is 9.0% (Ministry of Health of the Republic of Indonesia, 2021). Massage is the oldest method of treatment in the world. It encompasses healthcare and therapy that can relax stiff joints and unify body organs through strong strokes. Massage therapy is

not only used in salons and spas, but also in various hospitals and healthcare centers for infants. (Syaukani, 2015). There are many benefits obtained from infant massage, including aiding the development and growth of brain cells. A child who receives regular guidance and stimuli will develop faster than a child who lacks stimulation. The quantity of an infant's sleep significantly influences the growth and development of their brain; therefore, the quality and quantity of infant sleep need to be maintained (Wahyuni et al., 2020).

Initial data collection in 2022 indicated that there were 649 toddlers in the working area of Sungai Mardeka Community Health Center. Out of these, 329 toddlers (50.69%) were weighed. Among them, 302 toddlers experienced weight gain,

while 27 toddlers did not gain weight. Based on this data, it is apparent that nearly 50% or 320 toddlers were not weighed, implying a lack of growth or weight monitoring for these children. The research problem in this study is whether there is an influence of infant massage classes for infants aged 1-6 months on weight gain at PMB Andi Herawati in Karya Merdeka Subdistrict, Samboja District, Kutai Kartanegara Regency, East Kalimantan Province in the year 2023. The general aim of the research is to analyze the influence of infant massage classes for infants aged 1-6 months on weight gain in the independent practice of Midwife Andi Herawati in Karya Merdeka Subdistrict, Samboja District, Kutai Kartanegara Regency, East Kalimantan Province in the year 2023.

METHOD

The type of research employed in this study is a quasi-experiment or a quasi-experimental design aimed at obtaining data and information that predict outcomes to be acquired in a true experiment. The research design is a Two Group Pretest Posttest design, where the research subjects are divided into two groups: the control group and the treatment group, and both pretest and posttest measurements are conducted. The population in this study consists of mothers who have one-year-old infants within the working area of Sungai Merdeka Community Health Center. The sample for this study includes all mothers who have infants aged 1-6 months within the working area of Sungai Merdeka Community Health Center, selected through purposive sampling technique. The research variables consist of infant massage classes and infant weight. The instruments used in this study include the Infant Massage module, baby weighing scales, and an observation sheet for infant weight with four evaluation points.

Table 1. Frequency Distribution of Respondents Based on Respondent Characteristics at PMB Andi Herawati in the Year 2023

Variable	Category	Frequency	Percent (%)	Frequency	Percent (%)
Baby Age	1 Month	1	6.6	0	0
	2 Months	5	13.3	3	20
	3 Months	4	33	2	13.3
	4 Months	3	33.3	1	33
	5 Months	7	33.3	7	6.6
Gender	Male	8	26.6	8	7
	Female	8	67	8	46.6
Birth Weight	2500-2900	3	20	7	67
	3000-3400	4	46.6	0	53.3
	3500-3800		67		33
			53.3		53.3
			33		33
			53.3		46.6
			33		67
Total		15	100	15	100

Source: Primary Data

The most common characteristic among respondents based on the baby's age in the intervention group is infants aged 3 months, with 5 respondents (33.33%), while in the control group, it is infants aged 2 months, totaling 9 infants (60%). The gender distribution of respondents in both the intervention and control groups is balanced, with the male gender in the control group comprising 7 individuals (46.67%) and in the intervention group comprising 7 individuals (46.67%). As for female infants, they account for 8 individuals (53.33%) in the control group and 8 individuals (53.33%) in the intervention group. Regarding the characteristic of birth weight, the most common range in the intervention group is birth weight between 2500-2900 grams, with 8 individuals (53.33%), while the lowest count is for infants with a birth weight between 3000-3400 grams, totaling 3 individuals (20%). In contrast, for the control group, the highest birth weight range is also 2500-2900 grams (53.33%), and the lowest is for infants with a birth weight between 3000-3400 grams, which includes 7 respondents (46.67%).

RESULTS

Table 2. Frequency Distribution of Respondents Based on Weight Gain at PMB Andi Herawati

Weight Gain	Category	Frequency	Percent (%)
Increased	Intervention Group	13	43.3
	Control Group	6	20
Unchanged	Intervention Group	2	6.7
	Control Group	7	23.3
Decreased	Intervention Group	0	0
	Control Group	2	6.7
Total		30	100

Source: Primary Data

Weight gain occurred in 19 individuals, consisting of 13 individuals (43.3%) in the intervention group and 6 individuals (20%) in the control group. Respondents who did not experience weight gain (unchanged) were 9 individuals, with 2 individuals (6.7%) in the intervention group and 7 individuals (23.3%) in the control group. There were 2 individuals (6.7%) in the control group who experienced weight loss, and no respondents in the intervention group experienced weight loss.

Table 3. The Influence of Infant Massage on Infant Weight Gain at PMB Andi Herawati

Infant Massage Provision	Average Weight (grams)		P-value Normality	Test Paired T-Test
	Before	After		
Intervention Group	4460.67	5200.00	0.304	.000
Control Group	5237.33	5240.00	0.444	

Source: Primary Data

The normality test results show that the data are normally distributed with p-value greater than 0.05 for the Shapiro-Wilk test (intervention group 0.304 and control group 0.444), indicating that the Paired t-test can be utilized. Based on the results of the t-test using paired t-test analysis, a significance value of $p=0.000$ ($p<0.05$) was obtained. This signifies that there is an influence of infant massage classes for infants aged 1-6 months on weight gain.

DISCUSSION

The data obtained regarding infant weight gain reveals that a total of 19 individuals (63.3%) experienced weight gain. Among these, 13 individuals (43.3%) were from the intervention group, and 6

individuals (20%) were from the control group. Respondents whose weight remained unchanged were 9 individuals (30%), with 2 individuals (6.7%) in the intervention group and 7 individuals (23.3%) in the control group. Furthermore, 2 individuals (6.7%) from the control group experienced weight loss, while there were no respondents in the intervention group who encountered weight loss. Based on the t-test results, the significance value obtained is 0.000 ($p<0.05$), indicating that there is an influence of infant massage classes for infants aged 1-6 months on weight gain. This weight gain in infants is significantly attributed to the consistent provision of baby massage over the course of a month. Essentially, massaged infants experience increased enzyme absorption and insulin levels, which leads to better food absorption. As a result, these infants become hungrier and subsequently nurse more frequently, thereby increasing maternal milk production.

The effect of weight gain through massaging can also be observed in infants aged 1 to 6 months when massaged for 10-15 minutes daily. Infants who regularly receive massage demonstrate a significant weight gain compared to those who are not massaged. In conclusion, this research indicates a significant difference in weight gain between infants who received massage stimulation and those who did not. The massage was administered to infants aged 0-6 months for 15 to 20 minutes daily over a span of 4 weeks. The divergence in weight gain is observed at the 4-week mark.

This study aligns with research conducted by Ayse Gurol and Sevinc Polat (2012) titled "The Effects of Baby Massage on Attachment Between Mother and Their Infants." Using a T-Test, they found a p-value of 0.001 (<0.05). The research revealed that infant massage is effective in enhancing the attachment between mothers and their infants. This study was conducted in Turkey, where children hold great value and importance. Turkish women strive to have children immediately after marriage (Gurol & Polat, 2012). Similar research is documented in the journal "Science Midwifery." A Quasi-Experimental design with a Cross-Sectional research design was

employed, utilizing a checklist, infant massage SOP, and infant weighing scales. The results showed a $p\text{-value} < 0.05$, indicating an influence of infant massage on weight gain within the working area of Payung Sekaki Community Health Center in Pekanbaru, 2019 (Susi Hartati et al., 2020).

Based on the findings of the study on the influence of infant massage on weight gain among infants aged 1-6 months at PMB Andi Herawati in 2023, it can be concluded that the training provided to mothers with infants aged 1-6 months, followed by a one-month monitoring period, which included weekly massages, monitored through a WhatsApp group or direct home visits, significantly contributed to weight gain in infants aged 1-6 months. Therefore, in future research development, the researcher plans to incorporate baby massage as a health-improvement endeavor during the growth and development process of infants. This research utilized a module or guidebook provided to mothers for conducting baby massages. The module or guidebook features barcodes for easy access via mobile phones, even if mothers don't have the physical guidebook with them.

CONCLUSIONS

Upon conducting the paired t-test analysis, a significance value of $p=0.000$ ($p<0.05$) was obtained. This outcome signifies that there is indeed a significant influence of infant massage classes on infants aged 1-6 months with regard to weight gain. In other words, this research demonstrates that infant massage classes have a noteworthy impact on the weight gain of infants aged 1-6 months. These findings emphasize the importance of providing infant massage as one of the strategies to enhance their weight gain and overall growth.

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