

THE EFFECT OF BABY MASSAGE ON THE APPETITE OF WASTED TODDLERS AT MANISRENGGO PUBLIC HEALTH CENTER, KLATEN

Lusinta Agustina^{1*}, Henik Istikhomah², Desti Reka Karena Sari³

¹⁻³Poltekkes Kemenkes Surakarta

Email Korespondensi: lusinta.agusti@gmail.com

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ABSTRACT

Wasting is a condition caused by inadequate nutritional intake or infectious diseases. This form of malnutrition can lead to changes in a child's abilities, activity levels, and capacity to process various types of information. Baby massage is one alternative intervention that uses acupressure techniques by applying pressure to meridian points or energy flow lines on the body, which is relatively practical and easy to perform. This study aims to determine the effect of baby massage on the appetite of wasted toddlers at Manisrenggo Public Health Center, Klaten. This quantitative study used a quasi-experimental design with a one-group pretest-posttest approach. The research sample consisted of 30 wasted toddlers aged 12-60 months. The study was conducted in May 2024 using a purposive sampling technique. Baby massage treatment was administered for six consecutive days. Data were analyzed using the Wilcoxon test. The findings showed that the mean appetite score before baby massage was 3.5000, and after the intervention it decreased to 0.7000. Statistical analysis using the Wilcoxon test showed a p-value of 0.000, where $p\text{-value} < \alpha (0.05)$, indicating that baby massage had a significant effect on the appetite of toddlers at Manisrenggo Public Health Center. The appetite of wasted toddlers improved after receiving baby massage, demonstrating a significant effect on appetite before and after the intervention.

Keywords: Baby Massage, Appetite, Wasted Toddlers.

INTRODUCTION

The toddler period (Golden Period) is a crucial developmental phase that is highly sensitive to environmental influences. This period is very short and cannot be repeated. During this stage, adequate nutrition, quality sleep, physical fitness, a supportive environment, stimulation, and recreation are essential to ensure optimal growth. The success of improving infant and toddler health requires special attention and must

be supported by good nutritional status, as nutrition plays a significant role in determining the success of human resource development. One of the key health indicators used to assess progress in the Sustainable Development Goals (SDGs) is the nutritional status of children under five. Nutritional problems represent disturbances in individual or community well-being caused by the insufficient intake of

nutrients obtained from food (Anggraeni, 2021).

Wasting is an acute form of malnutrition associated with inadequate dietary intake or infectious diseases. Wasting is classified as a nutritional status category based on the Weight-for-Length/Height (WFL/H) index, with a Z-score < -2 SD (underweight or severely underweight). According to the Indonesian Ministry of Health Regulation No. 2 of 2020, WFL/H categories include severe malnutrition, malnutrition, normal nutrition, risk of overweight, overweight, and obesity. This condition is concerning, as WHO reported that in 2022 Africa had the highest number of wasted children under five, with 5.8 million cases (WHO, 2023). Data from the Indonesian Ministry of Health (SSGI 2022) show that the prevalence of wasting among Indonesian children under five increased by 0.6%, from 7.1% in 2021 to 7.7% in 2022. Central Java remains one of the provinces with a high prevalence of wasting, at 7.9%, including Klaten, which reached 6.2% (Sadiya, 2022).

Decreased appetite or feeding difficulties in toddlers can be addressed through pharmacological and non-pharmacological approaches. Pharmacological efforts include administering multivitamins and other micronutrients. Meanwhile, non-pharmacological approaches may involve herbal drinks, massage, acupressure, and acupuncture. Efforts to reduce wasting must begin with addressing malnutrition in children. Prolonged nutritional problems that are not treated promptly can lead to more severe conditions such as stunting. Baby massage is a form of healthcare-related touch therapy using specific techniques. It is one of the oldest and most widely practiced

therapeutic methods. For issues related to appetite, baby massage is particularly suitable. This method is a traditional healing practice originating from China, using acupressure techniques by applying pressure to meridian points or energy pathways in the body, which is relatively practical and easy to perform (Ersila, 2025).

Based on a preliminary study conducted at the Klaten District Health Office, Manisrenggo Health Center was identified as one of the facilities with a high number of wasted toddlers in 2024, totaling 184 children. Considering this situation, the researcher is interested in conducting a study titled "The Effect of Baby Massage on the Appetite of Wasted Toddlers at Manisrenggo Public Health Center, Klaten."

LITERATURE REVIEW

While external factors: which cause a decrease in appetite in children such as forms that are not of interest, parental error in presenting the variety of food, or because the children have started active by playing like a Toddler children ages (1-3 years), eating patterns, such as frequency and episodes of eating, the selection will be low or high-fat food, the energy content of food consumed, the suitability of a diet, dietary diversity consumed (Ambarwati & Marnia, 2015; Khairunnisa, 2012). Mentioned that massaging the small regularly may provide benefits to influence the stimulation of nerves and skin as well as producing the hormones that influence in increasing appetite the small, such as insulin and gastrin hormone that plays an important role in the process of absorption of food (Yulisetiyaningsih, 2024).

In infants who massaged, the second production of this hormone is

increased so that the absorption of food and appetite increases. Appetite increases later will make her weight increased. Increased appetite is also coupled with an increase in the activity of the vagus nerve (tenth neural brain)/nerve Wanderer (the brain's nervous system that works for the neck area down to the chest and the abdominal cavity) in moving the Peristaltic cells (the cells in the digestive tract that move in the digestive tract) to push food into the entire digestion. Thus, faster baby hungry or want to eat because of the pencernaannya the more smoothly. Of course when the baby massage (baby massage) is

done properly and with the right techniques (Nisa, 2017).

RESEARCH METHOD

This study employed a quantitative research design using a quasi-experimental approach with a one-group pretest-posttest design. The sample consisted of 30 wasted toddlers aged 12-60 months. The research was conducted in May 2024 using a purposive sampling technique. Participants received baby massage treatment for six consecutive days. The data were analyzed using the Wilcoxon test.

RESEARCH RESULTS

Table 1. Frequency Distribution of Characteristics Based on Age, Gender, Breastfeeding History

No	Characteristics	Frequency (f)	Percentage (%)
1	Age		
	2-24 months	21	70
	25-36 months	4	13,3
	37-48 months	2	6,7
	49-60 months	3	10
2	Gender		
	Male	22	73,3
	Female	8	26,7
3	Exclusive Breastfeeding		
	Yes	26	86,7
	No	4	13,3
	Total	30	100

Based on Table 1., it can be seen that the total number of respondents was 30. The majority of respondents were aged 12 to 24 months, totaling 21 children (70%). In terms of gender, most

respondents were male, with 22 children (73.3%). Regarding the history of exclusive breastfeeding, the majority had received exclusive breastfeeding, totaling 26 children (86.7%).

Table 2. Distribution Of Appetite Frequency Before And After Baby Massage

No	Appetite	Baby Massage			
		Before		After	
		N	%	N	%
1	All food is gone	0	0	14	46,7
2	75% of food is gone	0	0	11	36,7
3	50% of food is gone	2	6,7	5	16,7
4	25% of food is gone	11	36,7	0	0
5	5% of food is gone	17	56,7	0	0
6	Not consumed by respondents	0	0	0	0
	Total	30	100	30	100

Source: Manisrenggo Community Health Center Primary Data 2024

Based on Table 2., it can be seen that before receiving the massage intervention, most respondents had an appetite level of

5%, totaling 17 children (56.7%). After the massage intervention, 14 respondents (46.7%) were able to finish their meals completely.

Table 3. The Effect Of Baby Massage On Appetite In Wasting Toddlers

	N	Mean	P Value
Toddler's appetite wasting before massage	30	3,500	0,000
Toddler's appetite wasting after massage	30	0,700	

Source: Manisrenggo Community Health Center Primary Data 2024

Based on the bivariate analysis using the Wilcoxon Signed Ranks Test, the results showed a p-value of $0.000 < 0.05$, indicating that H_0 is rejected and H_a is accepted.

Therefore, there is a significant effect of baby massage on the appetite of wasted toddlers in the Manisrenggo Health Center area, Klaten.

DISCUSSION

Discussion of Respondent Characteristics Age

Based on Table 1, the study conducted at the Manisrenggo Health Center, Klaten, with 30 respondents, showed that most toddlers aged 12-60 months who experienced wasting were in the age group of 12-24 months, totaling 21 children.

According to Feigelman (2011), this age range represents the most rapid period of brain growth and development. By the end of the second year, brain development naturally begins to slow down. This

slowdown leads to reduced nutritional needs and appetite, as well as the emergence of picky eating behavior at this age.

Baby massage helps babies relax and promotes more effective rest. Babies who sleep well wake up with ample energy for activity. This increased activity leads to quicker hunger, boosting their appetite. Additionally, the stimulation of the vagus nerve enhances peristalsis, aiding in the movement of food through the digestive tract. As a result, the baby feels hungry more frequently, as digestion is more efficient (Nilasari, 2023).

Gender

Table 1. shows that the total number of respondents was 30, with most being male—22 children (73.3%).

This aligns with UNICEF's explanation that gender contributes to differences in children's nutritional status. Boys generally require more nutrients such as energy and protein compared to girls. Gender is an internal factor that influences body composition and subcutaneous fat distribution, which differs between boys and girls. Approximately 11% of boys' body weight consists of subcutaneous fat, whereas in girls it is around 18%. Girls tend to store more fat, while boys have greater muscle and bone mass.

Baby massage increases the amount of cytotoxicity of the immune system, stimulates digestive and excretory functions, helps train relaxation, reduces depression and tension, increases alertness, reduces pain, reduces bloating and colic (stomach ache), increases breast milk volume, increases body weight, increases growth, increases the baby's concentration and makes him sleep soundly, as well as improving blood circulation and breathing. Baby massage can also build a bond of love between parents and children (Gao, 2020).

History of Exclusive Breastfeeding

Based on Table 1, most toddlers (26 children or 86.7%) received exclusive breastfeeding, compared to only 4 children (13.3%) who did not.

This is consistent with research by Breij, Mulder, and Vark (2017), who found that babies who were exclusively breastfed had different levels of appetite-regulating hormones compared to those who were not. Serum ghrelin levels were

significantly higher in exclusively breastfed infants, suggesting that exclusive breastfeeding may reduce the risk of wasting. Regular monitoring of toddler growth—including weighing, measuring height, and providing supplementary feeding (PMT)—can help reduce the risk of wasting in the future.

Massage can increase absorption enzymes and insulin so that absorption of food essence becomes better, the child will become hungry quickly and therefore the child will breastfeed more often, thereby increasing breast milk production (Julianti, 2017). Increasing insulin in the body will facilitate glucose metabolism. The secretion of hydrochloric acid, pepsinogen, pancreatic enzymes, and the increased flow of bile from the liver aid in the digestion of food. When food enters the duodenum, it triggers the release of cholecystokinin, which in turn stimulates intestinal motility. Increasing the motility of the stomach and intestines will make it easier to mix, push food and absorb nutrients better (Windyarti, 2023).

Appetite Before Baby Massage

Feeding difficulties refer to a child's inability to consume the amount of food needed. A study of preschool children aged 4-6 years in Jakarta reported a prevalence of temporary feeding difficulties of 33.6%, with 44.5% experiencing mild to moderate malnutrition, and 79% having symptoms for more than three months. Research in Belgium found that 17% of children referred for severe feeding difficulties were diagnosed with reflux esophagitis without other underlying illnesses.

Table 2. shows that based on the Visual Comstock assessment sheet, 17 toddlers (56.7%) finished only 5% of their meals before

receiving baby massage. According to the child feeding guidelines in the Maternal and Child Health (KIA) book issued by the Ministry of Health, toddlers should be accustomed to eating three times a day (morning, afternoon, and evening) with the family, as well as consuming nutrient-rich foods high in protein such as fish, eggs, tofu, tempeh, and milk, along with 1-2 snacks per day.

Based on these findings, toddlers in the Manisrenggo Health Center area showed signs of poor appetite, indicating the need for stimulation to improve their eating habits. Immediate intervention is necessary to prevent further decline in weight that could worsen their condition and lead to stunting.

Appetite After Baby Massage

Table 2 shows that after six consecutive days of baby massage on 30 wasted toddlers, the post-test results indicated that 14 children (46.7%) were able to finish all their meals, while 11 children (36.7%) consumed 5% of their meals, and 5 children consumed 50% of their meals. Toddlers with better nutrient absorption tend to have increased appetite. Babies who receive massage experience an increase in digestive enzymes and insulin levels, which enhances nutrient absorption, causing them to feel hungry more quickly.

Appetite-stimulating massage helps improve blood circulation and optimize organ function, particularly digestive organs. Massage increases intestinal motility, improving nutrient absorption and enhancing appetite. Stimulation of the vagus nerve affects the gastrointestinal system by increasing peristalsis, accelerating gastric emptying, and causing hunger more quickly, which improves appetite. Additionally, massage increases digestive enzyme

production, aiding nutrient absorption. The absorbed nutrients enter the bloodstream, which also improves due to stimulation of the sympathetic nervous system.

Bivariate Analysis

Based on Table 2, the appetite of wasted toddlers before receiving massage therapy in the Manisrenggo Health Center area showed that most toddlers—17 children (56.7%)—consumed only 5% of their meals. After the massage intervention, the results indicated that the majority—14 children (46.7%)—were able to finish their meals entirely.

The normality test for baby massage and appetite among wasted toddlers before and after the intervention showed a significance value of 0.000, meaning the data were not normally distributed (significance < 0.05). Since the data were not normally distributed, the Wilcoxon Signed Rank Test was used for analysis. The Wilcoxon test on 30 wasted toddlers treated consecutively for 6 days showed better post-test results compared to the pre-test. The statistical test produced a p-value of 0.000, and because p-value < α (0.05), H_0 is rejected and H_a is accepted, indicating that baby massage has a significant effect on the appetite of wasted toddlers in the Manisrenggo Health Center area.

Based on the research findings, toddlers experienced an improvement in appetite after receiving baby massage, and the effect was more pronounced compared to those who did not receive massage. Providing baby massage improves toddlers' appetite patterns and has an impact on reducing wasting. This is consistent with Utami, Roesli (2016), who states that baby massage helps infants become more relaxed and

rest more effectively, enabling them to wake with sufficient energy for optimal activity. Increased activity leads to faster onset of hunger and improved appetite. Appetite improvement is also associated with increased vagus nerve activity (a cranial nerve responsible for functions from the neck down to the thoracic and abdominal regions), which enhances peristalsis and promotes the movement of food through the digestive tract. This leads to faster digestion, making toddlers feel hungry more quickly.

This study is supported by research conducted by Siti Nur Azizah (2023). Using the Wilcoxon test and Z distribution approach with a significance level of 0.05, the analysis yielded a significance value of 0.029, which is lower than α (0.05), indicating a significant effect of baby massage on appetite improvement. This effect is attributed to accurate techniques and appropriate stimulation during the massage process, which influence the outcomes.

CONCLUSION

The findings of this study indicate that most wasted toddlers at the Manisrenggo Health Center were aged 12-24 months and predominantly male. Before receiving baby massage, 56.7% of the toddlers consumed only 5% of their meals. After the massage intervention, 46.7% were able to finish their meals completely. Statistical analysis using the Wilcoxon test showed a significant effect of baby massage on improving appetite among wasted toddlers aged 12-60 months, with a p-value of 0.000. Overall, baby massage was proven to effectively enhance appetite in wasted toddlers in the Manisrenggo Health Center area.

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