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The Effect of Baby Spa on Body Weight Changes in Babies Aged 3-6 Months

Fitriani[1], Sri Wahyuningsih[2], Agustina Widayati[1], Sunanto[1]

[1] *Stikes Hafshawaty Zainul Hasan, Probolinggo, Indonesia*
[2] *Universitas Jember, Indonesia*

Correspondence should be addressed to:
Sri Wahuningsih
sriwahyuningsih@unej.ac.id

Abstract:
Infants aged 0-6 months are the most vulnerable to growth disorders. One way to increase a baby's weight is through baby SPA. This study aimed to determine the effect of infant SPA on weight changes in infants aged 3-6 months. This study used a quasi-experimental design with a control group pre-post test design approach. The population in this study were all infants aged 3-6 months at Ain Hartoko SPA, Tempeh District, Lumajang Regency, in July 2022. As many as 42 infants were divided into two groups, the experimental and the control groups, using the accidental sampling technique. The results showed that the baby's weight gain in the experimental group was mostly classified as overweight (56.3%), while in the control group, most were normal (62.5%). The Wilcoxon test results for the p-value for the experimental and control groups were both 0.000, so they experienced an increase in body weight after two weeks. The Mann-Whitney test results obtained p-value=0.045 <0.05, so infant SPA affects weight changes in infants aged 3-6 months. Health workers are expected to conduct counseling about infant SPA in collaboration with Toddler Posyandu cadres in the village to overcome failure to thrive in toddlers.

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INTRODUCTION

Infancy is a golden period as well as a critical period of development. Infancy is a critical period because babies are currently susceptible to the environment. It is said to be the golden age because infancy is short and cannot be repeated. This is what distinguishes children from adults. According to age, children show growth and development characteristics (Wahyuni et al., 2020). Physiologically, infants aged 0-6 months are the most vulnerable to growth and development disorders (Maemunah & Sari, 2022). If, during infancy, you experience malnutrition, it can cause growth and development disorders that are permanent and carried into adulthood (Juliyandari et al., 2018). This can also cause stunting conditions that affect the child's physique (Ardiana et al., 2021a). Mechanisms that improve infant nutrition are closely related to improving maternal quality of life (Andansari et al., 2023).

WHO data for 2021 shows that the number of cases of stunted growth in the world is currently the highest stunting which is 22%, wasting at 6.7%, and overweight at 5.7% (WHO, 2021). The 2018 Indonesian Riskesdas shows that the percentage of very short and short toddlers aged 0-23 months in Indonesia in 2018 is 12.8% and 17.1%, the percentage of undernourished in Indonesia is 3.9%, while the percentage of undernourished is 13, 8%, and overweight by 2.7%. In 2018 in East Java, the percentage of very short and short toddlers aged 0-23 months in Indonesia

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in 2018 was 12.8% and 17.1%, the percentage of malnutrition in Indonesia was 3.6%, while the percentage of undernourished was 11 6%, and overweight by 2.6% (Ministry of Health RI, 2019).

Growth is influenced by many factors, including internal factors (genetic) and external factors (environment) (Marmi, 2013). Growth is a continuous, constant process and part of the development process. Body weight is used as an indicator to determine the condition of children's growth and development and nutrition because body weight is sensitive to changes (Fauziah & Wijayanti, 2018). Underweight babies are more at risk of experiencing malnutrition, hypoglycemia, and developmental disorders (Fadhilah et al., 2021). Like any other organ in the body, the brain requires various nutrients to stay healthy and function. Foods that are good for your physical health (nutrition) are also good for your mental health (Kurniyawan et al., 2023). Providing additional foods and nutritional supplements to malnourished infants is one treatment for overcoming malnutrition (Ayunani et al., 2023).

Efforts can be made to reduce the incidence of malnutrition in children. Parents need to increase their concern for the growth and development of children, one of which is body weight, because of increasing or decreasing all tissues in the body, including body fluids, fat, muscle, and bone (Fauziah & Wijayanti, 2018). It is hoped that the baby will not be indicated as stunting. Prevention can be done by educating the mother to provide adequate nutrition for the baby (Ardiana et al., 2021b). One of the suggested methods for increasing baby weight is giving baby SPA, which aims to increase the capacity of the vagus nerve. Then enzymes that absorb gastrin and insulin will be produced more so that it helps the absorption of food intake get better. Absorption of good food intake can help increase infant metabolism and appetite so that the baby's weight increases (Fadhilah et al., 2021). It is also hoped that this can prevent excessive anxiety for parents of children so that health workers can provide appropriate education (Putri et al., 2022).

The baby spa is a series of stimulation of child growth and development by combining a baby gym. Baby swim and baby massage services (Puteri et al., 2019). Swimming is very effective in eliminating fatigue and boredom in babies. Swimming stimulates motor movements in babies because the baby's muscles will develop properly, the body's joints will work optimally, body growth will increase, and the body will become flexible (Jayatmi & Fatimah, 2020). Based on the background mentioned above, researchers are interested in researching the effect of infant SPA on weight changes in infants at Ain Hartoko SPA, Tempeh District, Lumajang Regency.

METHOD

The research design of this study used an experimental analytic research design quasi-experimental approach control group pre-test-post test design. The population in this study were all infants aged 3-6 months at Ain Hartoko SPA, Tempeh District, Lumajang Regency, in June - August 2022, with 42 babies. The sample used in this study was a portion of infants aged 3-6 months at Ain Hartoko SPA, Tempeh District, Lumajang Regency, in June - August 2022. The samples in this study had to meet the inclusion and exclusion criteria. The sample selection in this study used the technique of accidental sampling, where the selection of samples was based on what happened to be encountered by the researcher and met the inclusion and exclusion criteria. The inclusion criteria in this study were neck control well, and the head can be upright. Exclusion criteria in this study were babies with a fever, congenital heart defects, and open wounds. The number of samples studied was 16 people for each group, so the total sample was 32 babies. This research has passed an ethical test from the Health Research Ethics Committee of STIKES Hafshawaty Zainul Hasan Genggong Islamic Boarding School Probolinggo with Number: KEPK/223/STIKes-HPZH/IX/2022. The study was conducted for two weeks with intervention two

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times a week. Data analysis used is Test Wilcoxon Signed Rank and differences in weight change in infants between the experimental and control groups using Mann Whitney test.

RESULT

Characteristics of Mothers' Baby

Table 1. Characteristics of Mothers' Baby based on Age, Education, Occupation, Income, and Children Status (n=32)

Variable	Experiment Group		Control Group	
	f	%	f	%
Age (years old)				
< 20	0	0	0	0
20-35	12	75.0	11	68.8
> 35	4	25.0	5	31.2
Education				
Elementary school	0	0	0	0
Junior high school	2	12.5	5	31.3
Senior high school	11	68.8	8	50.0
College	3	18.7	3	18.7
Occupation				
Work	12	75.0	12	75.0
Doesn't work	4	25.0	4	25.0
Income				
Under UMK	2	12.5	4	25.0
Equivalent or above UMK	14	87.5	12	75.0
Children Status				
First	3	18.7	1	6.3
Second-Forth	13	81.3	15	93.7

Table 1 shows that most of the respondents in the experimental group were aged 20-35 years, namely 12 respondents (75%). Most of the respondents in the control group were aged 20-35 years, namely 11 respondents (68.8%). Most of the respondents in the experimental group had high school education, namely 11 respondents (68.8%). Half of the respondents in the control group had a high school education, namely eight respondents (50.0%). Most of the respondents, the experimental and the control groups, worked, namely 12 respondents (75%) each. Almost all respondents in the experimental group have income equal to or above the UMK, namely 14 respondents (87.5%). Most of the control group had payments equal to or above the UMK, namely 12 respondents (75%). Almost all respondents in the experimental group were children 2-4, namely 13 respondents (81.3%). Almost all respondents from the control group were children 2-4, namely 15 respondents (93.7%).

Weight Changes Among Babies in Intervention Group and Control Group

Table 2. Weight Changes Among Babies in Intervention Group and Control Group

Group	N	Minimum	Maximum	Mean	Std. Deviation
Intervention Group					
Pretest	16	5660	6650	6028.13	332.650
Posttest	16	5915	7000	6376.56	362.094
Change	16	250	500	348.44	79.262
Control Group					
Pretest	16	5680	6500	6053.13	281.702
Posttest	16	5970	6800	6356.25	266.780
Change	16	180	500	303.13	81.627

Table 2 shows that the baby's average weight before being given SPA was 6028.13 grams, and after being given spa, the baby was 6376.56 grams; the weight gain of the babies in the experimental group was an average of 348.44 grams. The average baby's weight during the pretest was 6053.13 grams; during the posttest, it was 6356.25 grams; the weight gains in the control group averaged 303.13 grams.

Table 3. Differences in Weight Gain for Babies Who Are Given and Not Given SPA Babies in Ain Hartoko SPA, Tempeh District, Lumajang Regency

BB increase	Experiment Group		Control Group	
	f	%	f	%
Less	0	0	2	12.5
Normal	7	43.7	10	62.5
More	9	56.3	4	25.0
Amount	16	100	16	100

Table 3 shows that most of the baby weight gain in the experimental group was classified as more, namely, nine respondents (56.3%), while in the control group, most were normal (62.5%).

Table 4. Wilcoxon Statistical Test Results

	Experiment Group	Control Group
Wilcoxon	-3.526	-3.518
Asymp. Sig. (2-tailed)	0.000	0.000

Based on Table 4, the results of the Wilcoxon Test p-value for the experimental group and the control group both had a value of 0.000, so they experienced an increase in body weight after two weeks. The Mann-Whitney test results obtained p-value=0.045<0.05, it mean that there is a difference in weight changes between the experimental group and the control group, which means that there is an effect of infant SPA on weight changes in infants aged 3-6 months at Ain Hartoko SPA, Tempeh District, Lumajang Regency.

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DISCUSSION

Based on the study's results, it was found that the average weight of the baby before being given SPA was 6028.13 grams. Growth is influenced by many factors, including internal factors (genetic) and external factors (environment) (Marmi, 2013). Body weight is used as an indicator to determine the condition of children's growth and development and nutrition because body weight is sensitive to changes (Fauziah & Wijayanti, 2018).

Breastfeeding consumption influences the baby's weight before being given SPA. If the mother's milk production is smooth, the baby's weight gain tends to be stable from birth. The baby's weight ranges from 5 to 6 kg. This difference can occur due to differences in the baby's birth weight and the mother's factor because the physiology of each mother's body is different in producing breast milk as the primary food source for the baby.

Based on the research results, it is known that after being given SPA, the baby becomes 6376.56 grams. One of the suggested methods for increasing baby weight is by giving baby SPA, which aims to increase the capacity of the vagus nerve. Then enzymes that absorb gastrin and insulin will be produced more so that it helps the absorption of food intake get better. Absorption of good food intake can help increase infant metabolism and appetite so that the baby's weight increases. (Fadhilah et al., 2021).

According to the researchers' assumptions, the change in weight in babies after being given SPA, even though it is classified as more, will not cause the baby to become obese because the increase is only around 250-500 grams, which means that the increase in baby's weight is very significant but not excessive and does not cause obese babies. The increase in baby weight is caused by stimulating the digestive nerves due to gentle massages on the baby's body. Besides that, the baby is given physical activity in the form of the baby gym and baby swimming, which requires energy so that the baby is hungry and sleepy. This is very necessary for the growth of the baby so that the baby's weight increases.

Based on the study's results, it was found that the average weight gain of the experimental group babies was 348.44 grams, while the control group babies' weight gain averaged 305.62 grams. Most of the baby weight gain in the experimental group was classified as more, namely, nine respondents (56.3%), while in the control group, most were average (62.5%). Wilcoxon Test Results p-value for the experimental group and the control group both had a value of 0.000, so they experienced an increase in body weight after two weeks. The Mann-Whitney test results obtained p-value = 0.045 <0.05 so that H1 was accepted, which means that there is a difference in weight changes between the experimental group and the control group, which means that there is an effect of infant SPA on weight changes in infants aged 3-6 months at Ain Hartoko SPA, Tempeh District, Lumajang Regency.

Baby SPA will stimulate the enzymes in the stomach so that the absorption of nutrients in the body is more optimal. SPA will also stimulate hormones that increase the baby's appetite, namely the hormones gastrin and insulin, which play an essential role in food absorption. If the production of these two hormones increases, food absorption and appetite will also increase so that body weight will increase (Galenia, 2014). Infant SPA provides positive biochemical effects, namely reducing levels of stress hormones (catecholamines), improving immune system levels (immunoglobulins) levels, mainly IgG, IgA, and IgM, and increasing serotonin levels. Positive clinical effects are changing brain waves, improving blood circulation, and breathing, stimulating digestive and excretory functions, and increasing weight gain (Idayanti & Widiyawati, 2020).

According to the researchers' assumptions, an increase in baby weight that is more than usual is very suitable to be given to babies whose weight is below average (thin) or babies who

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have problems breastfeeding so that by being given SPA babies, the baby will experience an increase in appetite to breastfeed so that with frequent the baby asking for milk will also help the mother to produce more milk. The more milk production is made, the baby's weight will increase. However, this is not suitable if it is done on babies with excess nutrition because it can increase the appetite for breastfeeding. So, to overcome this, the mother can arrange the baby's SPA time because, within two weeks, it is done four times so that the baby's nerve stimulation and Immunoglobulin are which causes the baby to feel often hungry and want to suckle. There are babies in the control group whose gain is less than usual, so these babies need SPA babies so that the babies experience a significant increase in body weight so as not to cause the babies to become thin.

CONCLUSION

The weight of infants aged 3-6 months before being given SPA babies in Ain Hartoko SPA Tempeh District, Lumajang Regency, averaged 6028.13 grams. After being given SPA babies in Ain Hartoko SPA Tempeh District, Lumajang Regency averaged 6376.56 grams. Infant SPA influences weight changes in infants aged 3-6 months at Ain Hartoko SPA Tempeh District, Lumajang Regency (p-value=0,000).

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CONFLICT OF INTEREST

There isn't any conflict of interest.

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