


## Baby SPA Relationship With Baby Weight Changes In PMB Herviza

Fatimah sari<sup>1</sup>, Lili Yuliana Tambunan<sup>2</sup>, Rodinih<sup>3</sup>, Ni Nyoman Widya Pradani<sup>4</sup>

Sekolah Tinggi Ilmu Kesehatan As Syifa Kisaran<sup>1,2</sup>, Akbid Bakti Indonesia<sup>3,4</sup>

Article Info	Abstract
<b>Keywords:</b> Baby SPA, weight gain	Background: low birth weight babies (LBW) is one of the causes of infant mortality in Indonesia. The purpose of this study was to determine the relationship of infant massage to weight gain in lbw infants. Type of analytical survey research with cross sectional design. Subjects consisted of infants who were given massage treatment and infants who were not given treatment. The total sample of 36 babies who were massaged. Data collection is taken from the documentation sheet of medical records in PMB Herviza. Data analysis using Chi-Square. The characteristics of the baby in the massage is the weight before the massage and weight after the massage and the characteristics of the baby who is not in the massage is the initial weight and weight after 1 month. The results of Pearson Chi-Square value is 40.783 by comparing using the confidence level $\alpha = 0.05$ , the results of X2 table is 3.84146 so that the results obtained are X2 count > x2 table (40.783 > 3.84146). Based on the value of significance obtained, it can also be seen that the X2 count of 0.000 < the value of $\alpha = 0.05$ . There is a relationship between infant massage to weight gain in infants with low birth weight category based on the results of OR = 5,500. Babies who are massaged have the potential to gain weight >140 grams 5.5 times greater than those who are not massaged.
This is an open access article under the <a href="https://creativecommons.org/licenses/by-nc/4.0/">CC BY-NC</a> license 	<b>Corresponding Author:</b> Fatimah sari Sekolah Tinggi Ilmu Kesehatan As Syifa Kisaran <a href="mailto:fatimahsari@gmail.com">fatimahsari@gmail.com</a>

### INTRODUCTION

Countries around the world in 2010 in order to accelerate human development and poverty eradication committed together known as the Millennium Development Goals (MDGs), and is expected to be achieved in 2015. One of the objectives of the MDGs program in Indonesia is to reduce child mortality, namely by creating a national program to reduce the number of deaths of infants and toddlers including low birth weight babies (LBW) (Moh, 2011).

Health indicators in Indonesia are assessed from Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR). The perinatal mortality rate in Indonesia according to the Indonesian demographic and Health Survey (IDHS) 2012 is 26 babies per 1000 pregnancies. These causes include perinatal disorders and babies with low birth weight (LBW) (BPS, 2012). Babies born with low weight are five times more likely to die than babies born with normal weight. LBW can also reduce the quality of child growth and development, so it needs proper handling so that these risks can be overcome.

The percentage of low birth weight babies in DIY province in 2012 was 4.48%. This figure is lower than the prevalence of LBW at the national level which reached 8.8%

(Ministry of health, 2015). However, it is higher when compared to 2011 (3.38%). Meanwhile, the prevalence of LBW in DIY in 2015 in Gunungkidul regency (6.16%), Kab. Sleman (4.23%), Yogya (5.57%), Kab. Bantul (3.58%), and Kab. Kulon Progo by 6.68% (DIY Health Office, 2015). LBW babies are the highest contributor to neonatal mortality (AKN). LBW problems that often occur are disorders of the respiratory system, central nervous system, cardiovascular, Hematology, gastrointestinal, kidney, and thermoregulation (Ministry of health, 2015).

According to the WHO (2009), all babies who weigh less than 2.5 kilograms (2,500 grams) are categorized as LBW or low birth weight babies, regardless of their gestational age. There are two lbw criteria, namely: 1) less than a month/premature babies born under 37 weeks of gestation. The sign is thin, shiny skin, very soft ear cartilage, lanugo/fine hair is found, flat nipples. In female babies, the labia majora has not covered the labia minora, and in male babies, the scrotum has not many folds and sometimes the testicles have not been palpated, the tattoo of the soles of the feet is only in 1/3 of the part, irregular breathing, weak crying, ineffective/weak sucking and swallowing reflexes. 2) full-term infants but malnutrition in the womb or so-called late fetal growth (PJT) ie the occurrence of disturbances in fetal growth to fetal weight below presentil 10.

The factors that trigger the occurrence of low birth weight babies in infants (LBW) include: a) giving birth to more than one baby. Twins are usually born early and do not have enough room to develop in the womb. Because of this, Twins have higher LBW problems; b) hereditary factors from their parents; c) there are problems with the placenta, such as pre-eclampsia which will reduce blood circulation to the fetus. This condition will interfere with fetal development, due to the lack of adequate distribution of oxygen and nutrients to the little one. d) LBW can also occur if the mother has health and emotional problems during pregnancy, such as anemia, miscarriage, diabetes, asthma, kidney disease, sexually transmitted diseases, stress, has a habit of smoking, drinking alcohol, to taking drugs. LBW risk itself is caused by several factors, namely: medical risk, demographic risk, health facility risk, and behavioral and environmental risks.

In premature birth (untimely birth) severe trauma occurs. Babies are detached from the warmth of their mother's womb and placed for weeks or months alone in an incubator. They often receive negative touches, such as blood draws, intravenous monitoring devices or catheters. As a result, premature babies are afraid of being touched, even though Touch is a basic human need. So, it is necessary to introduce a positive touch, namely baby massage as early as possible (Roesli, 2013).

Massage has been used medicinally and as a routine part of baby care for hundreds of years in many cultures and is one of the oldest therapeutic techniques in the world. Baby massage as a form of alternative medicine is becoming increasingly popular because of its simplicity, cost effectiveness, easy to learn and can be done at home by the family (Pitre, 2012). Baby massage can increase the bond of affection between children and parents, therefore baby massage should be done by the baby's parents (Serrano et al., 2010).

Keeler's opinion as quoted by Hayden (2008) also states that sensory stimulation in the form of massage has been shown to stimulate growth and improve nerve development. In addition, massage can help fussy babies so that they can sleep soundly and can reduce

illness, including abdominal pain. However, knowledge about baby massage is still unknown to the public, because people still entrust baby massage to baby shamans and lack of knowledge of the community to do baby massage to health workers. Another factor that causes people to prefer baby massage to baby shamans is the factor of customs that are still held firmly and develop from generation to generation. As well as, the belief that baby shamans are considered more understanding and proficient in doing baby massage that has been practiced since centuries ago (Suparyanto, 2011).

Baby massage is believed to maintain health and is able to stimulate and optimize the baby's growth and development. But without the correct massage technique, baby massage is dangerous, it can even cause death in infants. Until now, not all baby shamans understand the correct baby massage technique. Often encountered, the baby's head becomes the object of massage. In addition, often the baby massage technique is almost the same as the massage of the baby's mother because it becomes one with the delivery aid package (Sunarti in Sujarwo, 2014).

The positive impact of baby massage generally babies who get massage regularly will be more relaxed and calm. Through a touch of massage against muscle tissue, blood circulation can increase more smoothly, or the position of the muscles can be restored and repaired automatically to improve the functions of the organs as well as possible (Habibie, 1998 in Roesli, 2013). While the negative impact caused when the baby massage is done massage in the wrong way and not in accordance with medical provisions, side effects are swelling, bruising, pain in the baby so that the baby becomes fussy, shifting veins, injury, can even cause death in infants. Therefore, many parents are reluctant to do baby massage, they are afraid that there will be a risk of baby massage on their baby. The risk of baby massage is usually caused by the negligence of massage practitioners in massaging, wrong massage, and lack of knowledge of masseurs (Andria, 2011).

Complications of infant massage by baby shamans that have been reported are intracranial hemorrhage and obstructive ileus. Traditional baby massage movements by baby shamans there are some differences with baby massage movements based on baby massage guidelines, namely the baby massage guidelines, there is no massage on the head of the parietal and occipital parts, only in the form of smooth stroking movements on the face area, and massage movements on the stomach only massage movements according to the anatomy of called the I LOVE u movement, and this is different from the massage movements by some shamans who documented there was a massage on the head and stomach area, so it is possible that some complications (Lestari, 2013).

Based on the results of a preliminary survey, the researchers obtained information from physiotherapists that infant massage was often performed on babies who were born. baby massage / Baby SPA is done on babies who are brought by their mothers to be weighed and checked for health and this baby massage is done every Monday to Saturday. Based on some of the above exposure, the authors want to conduct further research on "the relationship of baby SPA with changes in baby weight in PMB Herviza".

## METHOD

The research design used in this study is an analytical survey. The population in this study was all babies aged 0-6 months, which amounted to 36 babies in PMBHerviza in 2022. The

sample of this study is a total sampling technique that the entire population was sampled as many as 36 babies. The measurement aspect is the use of rules to establish ways and means of measuring measurement results, categories, and measuring scales used to assess one variable.

## RESULTS AND DISCUSSION

### Characteristics of baby respondents who were given Baby Spa treatment and not given Baby Spa treatment

**Table 4.1** frequency of infant respondent characteristics by sex, age/age, body length and birth weight in PMB Herviza

No	characteristics of respondents		in massage		not in massage	
			N	%	N	%
1.	Gender	Male	11	30.56	17	47.22
		female	25	69.44	19	52.78
		total	36	100	36	100
2	Age/Age	2 Days-2 weeks	25	69.44	28	77.78
		3-4 weeks	9	25	6	16.67
		5-6 week	2	5.56	2	5.56
		Total	36	100	36	100
3	Panjang body length	40-42 cm	6	16.66	2	77,78
		43-45 cm	19	52.78	21	16,67
		46-48cm	11	30.56	13	5,56
		total	36	100	36	100
4	BB born	1500-1800gr	5	13.89	3	8.33
		1800-2499gr	31	86.11	33	91.67
		total	36	100	36	100

### Results Of Research Analysis

#### Result of analysis of infant weight Development category through infant massage treatment and without infant massage treatment

**Table 4.2** growth categories infant weight gain through infant massage treatment and without infant massage treatment in months

Baby massage	increase BB baby lbw		Total
	in 1 month		
	> 140 gr to 140 gr	≤ 140 gr	
Ya	30	6	36
No	3	33	36
Total	33	39	72

Table 4.2 above shows that the category of infant weight gain data is divided into two, namely the category of infant weight gain above average and infant weight gain below average. The two categories were differentiated according to the infants who were given infant massage treatment and those without infant massage treatment.

**Test results of data analysis of the relationship of infant massage to baby weight gain in one month**

**Table 4.3** results of Chi-Square data analysis of Infant Massage relationship to LBW infant weight gain in one month

Pijat Bayi	Kenaikan BB Bayi BBLR			Total	Or	Pearson ChiSquare
	> 140 gr	≤ 140 gr	in 1 month			
Ya	30	6	36	5,500	0,000	40,783
No	3	33	36			
Total	33	39	72			

Based on the results obtained in Table 7, it can be seen that the value of chi-square (X2 count) seen from the Pearson Chi-Square value is 40,783 by compared using the level of confidence  $\alpha = 0.05$  and  $dk = k - 1$ , the results obtained  $\chi^2$  table is 3.84146 so that the results obtained are  $X^2 \text{ count} > \chi^2 \text{ table}$  ( $40.783 > 3.84146$ ). Meanwhile, based on the value of significance obtained, it can also be seen that  $X^2 \text{ count}$  of 0.000 < the value of  $\alpha = 0.05$ . Thus, it can be stated that the hypothesis of  $H_0$  is rejected and  $H_a$  is accepted, or there is a relationship between infant massage given to the weight gain of infants with low birth weight (LBW). Based on the results obtained in the table, it can also be noted that  $OR = 5.500$ . So babies who are massaged have the potential to gain weight >140 grams 5.5 times greater than those who are not massaged.

**Discussion**

This study is based on the basic assumption that baby massage performed regularly and continuously can increase baby's weight based on the results of research obtained by the authors on medical record data, there are 40 LBW babies (low birth weight) with a birth weight range between 1500-2499 grams. The population of LBW babies were then sampled as many as 36 LBW babies who were then used as research respondents and divided into 36 respondents each for babies who were given baby massage and 36 other baby respondents who were not given baby massage treatment.

Respondents who were given baby massage treatment in the Baby Spa room Pmb Herviza performed massage for 15 minutes every week for four times in a period of one month. The initial weighing of the baby's weight is done before the baby gets the baby massage treatment and the next weighing is done once every week after giving the baby massage treatment every week so that the results of baby weight development can be known whether there is an increase, stagnant or actually a decrease.

The results of the data obtained showed that, the average weight of infants aged 0-3 months after being given baby massage treatment every week, the average growth of weight gain rose above the average of infants who did not get baby massage treatment. This shows that the provision of infant massage treatment is a form of treatment is the best alternative and inexpensive in an effort to raise the baby's weight more optimally, with the baby massage intervention should be done for 15 minutes every week for one month and should be done continuously (at least 4 times per week).

The growth category of baby weight gain above average also showed a very significant and dominant number compared to babies who did not get baby massage treatment. The growth of baby weight gain that occurs in baby massage will be able to increase the weight of the baby so that it does not interfere with the child's growth and development later in life. Baby massage should not only be done at any time, considering the effectiveness is quite high in raising the baby's weight has been very proven.

The findings of the above research have also been confirmed by experts who have proven that touch and massage therapy in infants provides many benefits. Touch therapy, especially massage produces 66 beneficial physiological changes and can be measured scientifically, including measurement of saliva levels, urine hormone/eatecholamine levels, and EEG (Electro Encephalogram/brain wave picture). Regular baby massage is useful to maintain the health of the baby. Especially because baby massage is cheap, easy and is commonly done in Indonesia so it is not a new thing for our culture. Bainbridge & Heath (2007)

suggests that infant massage has biochemical effects and physical or clinical effects on the baby's body. For babies it can develop communication, reduce stress or pressure and reduce pain disorders or reduce pain. For mothers, it can increase milk production, understand baby's cues, increase confidence and understand baby's needs. In addition, the benefits of baby massage in general are able to increase endurance, improve blood circulation and breathing, stimulate digestive function and disposal, increase weight gain, reduce stress and tension, increase alertness, make sleep more soundly, reduce pain (such as bloating and abdominal pain), improve the inner relationship between parents and baby, and increase the production of breast milk.

Coherent with the opinion of Rosalina (2007) which shows that baby massage is beneficial in increasing the baby's weight and growth. Departing from the research he conducted showed that, in 20 premature babies (weight 1,280 and 1,176 grams ) who were massaged 3x15 minutes for 10 days, weight gain per day 67 20% -47% more than those who were not massaged. Studies in full-term infants aged 1 to 3 months, who were massaged 15 minutes, 2 times a week for 6 weeks, gained more weight gain from control. Jenny Swcliffe in Roesli (2013) also suggests that babies who are massaged regularly from birth often gain weight faster than others, she thinks that may be because massage stimulates the production of growth hormones.

Gichara (2006) further also suggests that there are two aspects in the baby's body that are affected when the massage takes place, namely: 1). Emotional aspects, including: a. Instill a sense of confidence, freedom and security, as well as Balance, b. Instilling trust between parents and children, c. Reduce the hormone cortisol (stress trigger) in the bloodstream or maintain its stability during massage, d. Stimulate the production of endocrine hormones (pain relievers) to cause a sense of comfort in the baby, e. Maintain closeness between parents and babies through physical contact, such as eye contact, kissing, gentle stroking, stroking, and talking; 2). Physical aspects include: a. Launch digestion and disposal so that the baby is stimulated to breastfeed well, b. Avoid constipation, colic and diarrhea, c. Increase the growth and development of the baby, d. Increase growth hormones produced by the pituitary gland, e. Smooth the blood flow in the



body so that a feeling of warmth in the hands and feet, f. Relaxing the muscles and flexing the joints especially as the baby stretches for 68 starts more of his physical movements, g. Helps eliminate dead cells and remove body toxins through the skin, h. Smooth breathing such as: reduce mucus, overcome coughs, flu, ear infections, and disorders of the nose.

Babies who are massaged experience an increase in vagus nerve tone (the 10th nerve of the brain), this makes the levels of gastrin and insulin absorption enzymes rise so that better absorption of food. Better absorption of food will cause the baby to get hungry quickly and therefore suckle more often as a result, milk production will be more and the baby's weight will quickly rise. Babies who are massaged also experience decreased levels of stress hormones because massage on babies can make babies calmer, not easily fussy because they are tired so that babies can sleep better. Massage can also make the baby experience an increase in endurance so that the baby is not easily sick then the baby's growth will not be disturbed and his weight will increase (Roesli, 2001).

the increase in lbw baby weight refers to the opinion expressed by (Hidayat, 2008) where the baby's weight is divided into 2, namely at the age of 0-6 months. For the age of 0-6 months, the baby's weight will increase every week by about 140-200 grams and his weight will be 2 times his birth weight at the end of the sixth month. While at the age of 6-12 months there is an increase every week of about 24-40 grams and at the end of the 12th month there will be a 3-fold increase in birth weight. The authors understand that there are other factors that contribute to the increase in infant weight gain, such as hereditary/genetic factors, gender, intake factors and environmental factors (prenatal environment, postnatal factors). Postnatal factors are also influenced by several factors such as nutrition, physical and chemical environment, psychological factors, factors of chronic disease/congenital disorders, endocrine, socioeconomic, environmental factors of parenting, stimulation factors (Soedjatmiko, 2006). However, giving baby massage treatment to LBW babies is considered very effective in gaining weight.

## CONCLUSION

The results of this study provide some conclusions of the study as follows: The proportion of infant weight gain growth that was given infant massage treatment showed that the results were mostly dominant had an increase in infant weight growth > 140 grams in a number of 30 infants. While the number of babies who were given baby massage treatment had a baby weight gain of 140 grams, there were only 6 babies. The proportion of growth in weight gain of infants who were not given infant massage treatment showed that most of the dominant had an increase in the growth of ba and infant weight of  $\leq 140$  grams, ie there were a total of 33 infants. While the number of babies who have baby weight gain > 140 grams there are only 3 babies. There is a relationship between infant massage to weight gain infants with low birth weight category (LBW). Based on the results, it can also be known that OR = 5,500. So babies who are massaged have the potential to experience an increase of 5.5 times greater than those who are not massaged

## REFERENCES

Aminati, Dini. 2013. Pijat dan Senam untuk Bayi dan Balita. Yogyakarta: Brilliant Books

- Andariya Ningsih, Dewi. 2014. Pengaruh Berat Badan Bayi Usia 0-6 Bulan yang Diberi Terapi Pijat Sesuai SOP dan Tidak Sesuai SOP di Puskesmas Banyuputih Tahun 2014. Tesis
- Andriana, Dian. 2011. Tumbuh Kembang dan Terapi Bermain pada Anak. Jakarta: Salemba Medika
- Anonim. 2008. Pertumbuhan Berat Badan Bayi. [www.info-bunda.com](http://www.info-bunda.com). posting 04/13/2009 : 12 : 43 WIB
- Badriah, Dewi Laelatul. 2011. Gizi dalam Kesehatan Reproduksi/RAD. Jember: Refika Aditama, Eresco
- Bainbridge, N. & Heath, A. 2007. Baby Massage (Kekuatan Menenangkan dari Sentuhan). Jakarta: Dian Rakyat
- Depkes. 2011. Buku Kesehatan Ibu dan Anak. Jakarta: Kementerian Kesehatan RI
- Dewi. S. 2013. Pijat dan Asupan Gizi Tepat untuk Melejitkan Tumbuh Kembang Anak. Yogyakarta: Pustaka Baru Press
- Dewi, dkk. 2012. Pengaruh Pijat Bayi Baru Lahir terhadap Bonding Attachment di RS Umum Daerah Pekanbaru. Jurnal Seri Pediatri
- Dewi, Marisa. 2009. Gambaran Pelaksanaan Pijat Bayi oleh Dukun Bayi di Wilayah Kerja Puskesmas Kasihan 1. Karya Tulis Ilmiah. UMY
- Dewi, Nyoman N. 2010. Pengaruh Stimulasi Pijat Bayi Terhadap Peningkatan Berat Badan Bayi Lahir Cukup Bulan. <http://www.pengaruh.stimulasi.pijat.bayi.terhadap.peningkatan.berat.badan.pada.bayi.lahir.cukup.bulan.html>. Diakses Tanggal 20 Mei 2022.
- Field TM, & Schanber SM. 1986. Tactile/Kinesthetic Stimulation Effect On Preterm Neonates. Diakses pada tanggal 22 Mei 2011 dari <http://www.pediatrics.org.id>
- Hayden, M. 2008. Baby Massage Stimulates Bonding. <http://search.proquest.com/docview/469093984?accountid=34598>. Diakses November 2014
- Hidayat, Alimul Aziz. 2007. Metode Penelitian Kebidanan Teknik Analisa Data. Jakarta : Salemba Medika
- Lee, H.K. 2006. The Effect of Infant Massage on Weight, Height, and Mother Infant Interaction. Jurnal of Korean Academy of Nursing. Volume 36, No. 8.
- Merineherta. 2009. Pengaruh Pijat Bayi terhadap Peningkatan Berat Badan Bayi Usia 3-6 bulan di Kelurahan Pasie Nan Tigo Kecamatan Koto Tengah Kota Padang Tahun 2009. Skripsi. Universitas Program Studi Ilmu Keperawatan Fakultas Kedokteran Unand
- Nanny, Vivian. 2010. Asuhan Neonatus Bayi dan Anak Balita. Jakarta: Salemba Medika
- Notoadmojo, S. 2012. Metodologi Penelitian Kesehatan. Jakarta: Rineka Cipta
- Nursalam, Rekawati Susilaningrum, dan Sri Utami. 2009. Asuhan Keperawatan Bayi dan Anak untuk Perawat dan Bidan. Jakarta: Salemba Medika
- Pitre, S. 2012. Effect of Massage on Physiological and Behaviorral Parameters Among Low Birth Weight Babies. International Journal of Sciene and Research. Volume 3, No.5.
- Prasetyono. 2009. Teknik-Teknik Tepat Memijat Bayi Sendiri. Yogyakarta: DIVA Press
- Pratyahara. 2012. Keajaiban Terapi Sentuhan untuk Bayi Anda. Yogyakarta: Javalitera
- Prawiroharjo, Sarwono. 2009. Buku Acuan Kesehatan Maternal Neonatal. Jakarta: PT.Bina Pustaka



- Proverawati, A. & Ismawati, C. 2010. Berat Badan Lahir Rendah. Yogyakarta: Nuha Medika
- Purnamasari, Dewi. 2011. Panduan Pijat Praktis Balita Anda agar Cerdas dan Sehat. Yogyakarta: Pustaka Salomon
- Putri, Alissa. 2009. Pijat dan Senam untuk Bayi dan Balita Panduan Praktis Memijat Bayi dan Balita. Yogyakarta: Brilliant Offset
- Rahayu, Ary Oktor Sri. 2010. Hubungan Pengetahuan dengan Sikap Ibu terhadap Perawatan Lanjutan Bayi Prematur dari RSUD. Dr. Pirngadi Medan Tahun 2011. Skripsi. Medan: Universitas Sumatra Utara
- Rahmia, Yori, Wedy Wahyub, Eliza Anasca. 2012. Pengaruh Terapi Pijat Terhadap Kenaikan Berat Badan Bayi Prematur di RSUP. Dr. M. Djamil Padang RSUP Dr.M.Djamil Padang. Skripsi. Progam Studi Ilmu Keperawatan Universitas Andalas Fakultas Kedokteran Universitas Andalas
- Rianti. 2006. Pengertian KMS. Available: <http://gizinet.com/> diakses tanggal 10 April 2015
- Roesli, Utami. 2013. Pedoman Pijat Bayi. Jakarta: Trubus Agrowida Roesli, Utami. 2013. Pedoman Pijat Bayi Prematur Dan Bayi Usia 0 – 3 Tahun. Jakarta: Trubus Agrowida
- Rosalina, I. 2007. Fisiologis Pijat Bayi. Bandung: Trikarsa Multi Media dan Johnson & Johnson Indonesia