

Combination of Baby Massage and Hydrotherapy to Increase Body Weight in Infants Aged 3 – 6 Months with Low Birth Weight Infants

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Abstract:- Low birth weight infants is if baby weighs less than 2,500 grams (5 pounds, 8 ounces), they have a low birth weight. Some babies with low birth weight are healthy, even though they're small. But having a low weight at birth can cause serious health problems for some babies. Underweight and malnutrition can affect physical and health disorders in toddlers. The incidence of malnutrition will cause complications in the growth and development of the baby. Body weight is the most important anthropometric measurement and is most often used in infants to see nutritional status. The purpose of this study was to determine the benefits combination of baby massage and hydrotherapy modalities to increase low weight babies aged 3-6 months. The results of this study used a sample of 16 babies. The research subjects were divided into 2 groups, namely the baby massage group, which consisted of 8 babies and the combination of baby massage and hydrotherapy, which consisted of 8 babies. The study was conducted 2 times a week for 4 weeks, evaluation was carried out using scales and midline. The mean pre massage was 4.970 grams and increased in post massage by 5.460 grams resulting in a low weight gain of 0.49. The mean pre combination of baby massage and hydrotherapy was 5.150 grams and increased in post hydrotherapy by 6.000 grams resulting in a low baby weight gain of 0.85. These results show that the average increase in body weight in the combination group of baby massage and hydrotherapy is higher than baby massage.

Keywords:- Baby Massage; Hydrotherapy; Low Birth Infants.

I. INTRODUCTION

Infancy is a golden period as well as a period of crisis in one's development. It is said to be a crisis period because at this time babies are very sensitive to the environment and it is said to be a golden age because infancy is very short and cannot be repeated. One indicator of growth in children under five is the child's weight. Infancy is divided into two periods, namely the neonatal period starting from 0-28 days, while the post-neonatal period starts from 29 days to 11 months [1].

Infants are one of the groups or population groups that are prone to malnutrition. Early growth disorders are caused by malnutrition during the fetal period, exclusive breastfeeding ("Air Susu Ibu / ASI") that is not appropriate and giving complementary food too early. Therefore, babies cannot consume any food at the age of 0-6 months and breast milk is the best food that is very suitable for the baby's digestive conditions [2].

The increase and decrease in body weight must be considered during infancy, the child's weight gain in the first year of life if the child gets good nutrition, namely from birth to the first 6 months. Normal baby weight at 6 months is 8.1 kg, 9.000 grams, 10.000 grams for baby girls, while for baby boys it ranges from 8.800 grams, 9.800 grams, 10.800 grams. Generally, a 6-month baby's weight gain is around 85-140 grams each week. Whereas babies who get poor nutrition can affect low body weight at the age of 6 months [3].

Underweight is a major problem in the health sector, especially in developing countries (WHO, 2004). The cause of underweight developed by UNICEF, underweight is caused by many interrelated factors both directly influenced by infectious diseases and insufficient nutritional intake such as lack of exclusive breastfeeding in quantity and quality, while indirectly influenced by the range and quality of health services, parenting styles insufficient children, unfavorable environmental conditions and low food security at the household level.

The results of a preliminary study conducted in the working area of the Gebang Health Center, Gebang District, Purworejo Regency, data on the nutritional status of infants in 2017 found cases of underweight of 7.64%, stunting of 2.77%, and wasting of 1.11%. The author is interested in studying the factors related to the nutritional status of infants. The age range in this study was 0-6 months old, located in the working area of the Gebang Health Center, Gebang District, Purworejo Regency [4].

The purpose of this study was to determine the benefits combination of baby massage and hydrotherapy modalities to increase low weight babies aged 3-6 months. Baby massage is a touch therapy with a technique that uses limb movements (hands, fingers, elbows) or other aids to soft tissues (skin,

muscles, nerves) which provide a stimulus, relaxation and blood circulation effect. Baby massage is very useful in optimizing the growth and development of children, including increasing the absorption of food so that the baby will get hungry faster and the baby will breastfeed more often to the mother, so that it can increase the baby's weight. Besides that babies who are routinely massaged will also improve their sleep quality, namely babies sleep more deeply and increase alertness, as a result of changing the baby's brain waves will also have a stronger immune system [5].

Hydrotherapy is physical exercise by immersing in warm water to improve the body's mechanism in dealing with external threats. Swimming can encourage motility newborn digestive tract, increase gastrin secretion and insulin, promoting food to be digested and assimilated. Research enhances that swimming increases appetite, newborn. Increasing number swimming, can speed up the discharge meconium [6].

II. RESEARCH METHOD

This research method is experimental with pre and post test design. This study used a sample of 16 babies. The research subjects were divided into 2 groups, namely the baby massage group, which consisted of 8 babies and the combination of baby massage and hydrotherapy, which consisted of 8 babies. The study was conducted 2 times a week for 4 weeks, evaluation was carried out using scales and midline. The research time was from June to December 2022.

III. RESULT AND DISCUSSION

In this study, a comparison was made between the group of babies who were given baby massage and the group of babies who were given a combination of baby massage and hydrotherapy. Each number of samples in each group is 8 babies aged 3-6 months with low birth weight category. The following table presents the influence test data for each group:

Table 1 Sample Characteristics

| Distribution of Sample characteristics | | |
|--|---------------------------|---|
| Group 1 (baby massage) | | |
| Aged | 3 - 4 month | 4 |
| | 5 - 6 month | 4 |
| Gender | Male | 3 |
| | Female | 5 |
| Weight at Birth | 1.500 - 1.999 grams | 5 |
| | 2.000 grams - 2.500 grams | 3 |
| Group 2 (Combination of Baby Massage dan Hydrotherapy) | | |
| Aged | 3 - 4 month | 3 |
| | 5 - 6 month | 5 |
| Gender | Male | 4 |
| | Female | 4 |
| Weight at Birth | 1.500 - 1.999 grams | 6 |
| | 2.000 grams - 2.500 grams | 2 |

Table 2 Test the Effect of Treatment in sample Group

| Effect of Intervention | |
|---|--------------|
| Test with Wilcoxon Test | Significance |
| Group 1 (Baby Massage) | 0.011 |
| Group 2 (Baby Massage dan Hydrotherapy) | 0.001 |

Based on the table above, the results of the different test were obtained using the Wilcoxon test where the significance value of the combination of infant massage and hydrotherapy was smaller than the infant massage intervention. The mean pre massage was 4.970 grams and increased in post massage by 5.460 grams resulting in a low weight gain of 0.49. The mean pre combination of baby massage and hydrotherapy was 5.150 grams and increased in post hydrotherapy by 6.000 grams resulting in a low baby weight gain of 0.85. These results show that the average increase in body weight in the combination group of baby massage and hydrotherapy is higher than baby massage.

IV. CONCLUSION

Underweight is a major problem in the health sector. The cause of underweight developed by UNICEF, underweight is caused by many interrelated factors, both directly influenced by insufficient nutritional intake such as lack of exclusive breastfeeding in terms of quality and quantity, while indirectly influenced by the range and quality of health services, adequate child care patterns, poor environmental conditions and low food security at the household level [7].

Based on these problems, the interventions that can be provided by physiotherapy are baby massage and hydrotherapy. Baby massage has an influence on optimizing the growth and development of children, including increasing

the absorption of food so that the baby will get hungry faster and the baby will breastfeed more quickly to the mother, so that it can increase the baby's weight. In addition, babies who are routinely massaged will also improve their sleep quality, namely babies sleep more deeply and increase alertness, as a result of changing the baby's brain waves will also have a stronger immune system.

Important to note that premature infants receive varied levels of stress and painful processes inside the NICU environment. Due to these factors, premature infants can evolve with discomfort signs, that result in physiological response changes, such as the increase in blood pressure, HR and RR. The interventions that can reduce these changes caused by the NICU environment, provide beneficial effects to premature infants [8].

While hydrotherapy is physical exercise by soaking in warm water to improve the body's mechanisms in dealing with external threats. In children aged 4-6 months it is to stimulate the baby's motor movements, babies who sweat will have a better body balance, the baby's muscles will develop very well, body growth will increase and the body will become flexible, soaking and swimming will hone independence, courage, and baby's self-confidence, and can increase IQ (intelligence of mind) and concentration.

Based on the results of research on the effect of hydrotherapy and massage on weight gain in infants aged 6 months, according to (Noorbaya et al, 2018). Hydrotherapy is more proven to increase body weight because when hydrotherapy the baby expends more energy when swimming for 20 minutes in warm water media so that the baby expends more energy in the body, after the baby does the hydrotherapy treatment the baby's appetite will increase and the pattern sleep will get better so that the baby experiences a better weight gain from relaxing baby massage.

Based on the results of research on the effect of baby massage on increasing body weight in infants according to (Marni et al, 2019). Based on the research that has been described, it can be taken the conclusion that the characteristics of the majority of respondents were male 53.3% (16 respondents), infants aged 3.1 to 6 months 53.3% (16 respondents). Based on the Wilcoxon test, the baby's weight before and after massage was obtained with a p volume of 0.000, which means that there is an effect of massage on increasing the baby's weight.

Based on the results of research on the relationship between the frequency of baby SPA and the weight gain of babies aged 3-12 months at the Luqi Medika Clinic according to From the results of the research conducted, most of the frequency of children doing baby SPA visits routinely was 26 children (60.5%) and only 17 children (39.5%) did baby SPA non-routinely. Most of the weight gain in children who did baby SPA experienced a normal increase according to the age of the baby as many as 25 respondents (58.1%) and only 18 children (41.9%) experienced an abnormal increase according to the age of the baby.

Solus Per Aqua (Spa) in 2 times per week could significantly increase infant weight effectively. Therefore, it is recommended for midwife to apply this intervention to increase the weight gain of babies and to reduce the number of skinny infants in Indonesia [9]

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