THE EFFECTIVENESS OF CERIA BABY MASSAGE VIDEO ON BABY WEIGHT GAIN IMPROVEMENT IN 1-2 MONTHS

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Abstract

One of the mechanisms to increase the volume of breast milk production is by giving exclusive breastfeeding on a regular basis and babies will breastfeed more often if they are stimulated through baby massage stimulation. The purpose of this study to analyze the effectiveness of a ceria baby massage video on increasing baby weight at the age of 1-2 months. The research method used in this study is a quantitative study with a quasi-experimental approach with a two-group pretest-posttest research design. Samples were taken by purposive sampling of as many as 30 people. The results of this study showed that ceria baby massage videos were effective in increasing infant weight at the age of 1-2 months (p-value = 0,000) with a value of = 0,05. The touch and movement of baby massage activate the vagus nerve so that food absorption is better. The video for Ceria baby massage has an abbreviation for Mother and Child Bonding Story was made by the researcher herself. Contains stages of baby massage according to operational standards accompanied by songs as a source for baby's parents to do baby massage according to the stages taught.

Keywords: *Ceria baby massage video, weight gain, baby of 1-2 month*

INTRODUCTION

Infant growth and development is a golden and critical period, so it needs to be considered from an early age. Many things are optimized for early growth and development so that there are no deviations or delays that are certainly not expected[1].

Based on the *World Health Organization* (WHO) in 2016, there are 2.6 million babies each year who die in their first month due to low birth weight, asphyxia, sepsis, and congenital abnormalities so that nutritional fulfillment is hampered in the first month of life[2].

The Indonesian Health Profile in 2017 states that based on the BB/U index, toddlers 0-23 months experience the percentage of severe malnutrition is 3,50% and lack of nutrition is 11,30%, good nutrition by 83,50%, and over nutrition by 1,60%. Therefore, the problem of malnutrition in Indonesia is still a public health problem that is close to a high prevalence. As for malnutrition and lack of it is influenced by the lack of exclusive breastfeeding which results in weight loss[3].

Based on the Profile of the Health Office of the Province of East Kalimantan, the infant mortality rate in the province of East Kalimantan in 2016 reached 644 cases. Judging from the data per district/city, the infant mortality rate in Samarinda reached 33 cases[4].

Therefore, exclusive breastfeeding is needed which is useful in increasing nutrition and a strong bond of love between mother and baby. This has been supported by the National Medium-Term Development Plan/RPJMN (2015-2019) which has been implemented to reduce the Infant Mortality Rate (IMR) through exclusive breastfeeding to 24 per 1000 births[5].

One of the mechanisms in increasing the volume of breast milk production is by routinely giving exclusive breastfeeding to infants and babies will breastfeed more often if they are given stimulation through baby massage stimulation. Touch and movement in baby massage can activate the vagus nerve in babies so that food absorption is better. Babies will be hungry faster so they will feed their mother more often. The process of breastfeeding more often will stimulate the production of more milk. This will support weight gain in infants[6].

The *scaling-up nutrition* globalmovement has introduced the term first 1000 days of life. In this period, growth and development takes place rapidly, all basic needs that need to be met include nutrition, affection, stimulation, immunization, and hygiene. One of the stimulations that provide great benefits in increasing the baby's weight is baby massage. Giving baby massage stimulation as early as possible became the basis for this study to do baby massage for infants aged 1-2 months[7].

Video is one type of audio-visual media that can describe an object that is moving at once with the appropriate sound and has its own charm[8]. The video for baby massage “Ceria” has an abbreviation for Mother and Child Bonding Story. This video is a video made by the researcher himself. Contains the stages of baby massage according to the SOP accompanied by a song created by the researcher. This video is a medium used by researchers as a source for parents of babies to do baby massage according to the stages taught.

One of the clinics with the largest baby visits is the Kartika Jaya Clinic. Based on a preliminary study on December 9th, 2020, data for October 2020 showed that there were 200 babies aged 1-5 months who were under clinical monitoring. Data on baby visits at the age of 1-2 months in November-December 2020 there were 105 babies, of which around 10% of babies experienced weight that did not increase according to KMS so early stimulation was needed to increase growth and development in the first 1000 days of life. Therefore, research in the intervention group was carried out at the Kartika Jaya Clinic.

In November-December 2020, a preliminary study was conducted at PMB Hj. Eni Marfu'ah, Amd. Keb, from the visits of 40 babies at the age of 1-2 months, there were 10 babies who experienced weight gain of only 100-200 grams so that it was not according to the increase in KMS and had never had baby massage. This became the basis for conducting research on the control group at PMB Hj. Eni Marfu'ah, Amd. Keb.

In line with the research by Sri Handayani and Rasumawati in 2018 entitled “Increase Weight Infant With Family Approach Through Massage Therapy” which carried out baby massage with a family approach. Based on the results of the study, the average baby aged

5,5 months and mothers who did not work increased up to 0,80 kg. In the multivariate analysis, it was found that the p value = 0.0001, which means that there was an increase in the baby's weight with a family approach through baby massage[9].

Based on the above background, the researcher wants to prove the research entitled "The Effectiveness of Ceria Baby Massage on Increasing Baby Weight at the Age of 1-2 Months at Kartika Jaya Clinic".

MATERIAL AND METHODS

This research was started from 25 May-25 June 2021 at PMB Hj. Eni Marfu'ah, Amd. Keb and on June 6-6 July 2021 at Kartika Jaya Clinic. This research is a type of research *Quasi Experimental Design* with a *two group pretest-posttest design*. The population in this study were all infants aged 1-2 months in the working area of Kartika Jaya Clinic and PMB Hj. Eni Marfu'ah, Amd. Keb consists of 35 babies.

Sampling was done by Non Probability Sampling, namely by purposive sampling so that the number of samples in this study were 30 babies at Kartika Jaya Clinic as the intervention group and 30 babies in PMB Hj. Eni Marfu'ah, Amd. Keb as a control group. The inclusion criteria in this study were:

1. Healthy
2. Babies born aterm (37 weeks - 40 weeks' gestation)
3. Normal birth weight babies 2500 grams - 4000 grams
4. Infants aged 1-2 months
5. Babies with breast milk nutrition
6. Babies not having disease and any abnormalities
7. The respondent's parents are willing to have their baby massaged.

The exclusion criteria in this study are:

1. Infants with congenital abnormalities
2. Infants who are in a state of illness
3. Infants with complementary feeding nutrition
4. Infants and parents of respondents cannot participate in the study until the end
5. Parents of respondents who are not willing to have their babies massaged

The independent variable in this study is a cheerful baby massage video while the dependent variable is the increase in baby weight at the age of 1-2 months. In this study using the analysis method Paired *of T test* with significance level that is *α* of 5% or 0,05. The materials used in this study were baby scales, Ceria baby massage videos, observation sheets, and KMS.

RESULTS

Profile of Respondents

Table 1. Frequency and percentage of the profile of the respondents

Characteristics	Group			
	Intervention		Control	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Age (month)				
1	21	70,0	24	80,0
1,5	1	3,3	1	3,3
1,8	1	3,3	1	3,3
2	7	23,3	4	13,3
Gender				
Male	13	43,3	17	56,7
Female	17	56,7	13	43,3
Birth weight (gr)				
2500	2	6,7	1	3,3
2700	6	20,0	3	10,0
2800	0	0,0	5	16,7
2900	1	3,3	1	3,3
3000	6	20,0	0	0,0
3100	1	3,3	0	0,0
3200	0	0,0	2	6,7
3300	3	10,0	2	6,7
3500	5	16,7	1	3,3
3700	1	3,3	1	3,3
3800	0	0,0	6	20,0
3900	1	3,3	0	0,0
4000	4	13,3	8	26,7

Based on table 1, it can be seen that in terms of the age characteristics of the respondents, most of the respondents were 1 month old with a total of 21 babies in the intervention group and it is known that almost all respondents were 1 month old with a total of 24 babies in the control group.

In terms of the gender characteristics of the respondents, it is known that most of the respondents are female with 17 babies in the intervention group and male sex with 17 babies in the control group.

Based on the characteristics of the respondent's birth weight, it is known that almost half of the respondents with a birth weight of 2700 grams and 3000 grams each have 6 babies in the intervention group and a birth weight of 4000 grams with a total of 8 babies in the control group.

Distribution Baby Weight Based on Pretest and Posttest Group Intervention and Controls

Table 2. Overview Mean Pretest and Posttest Weight Infants in The Intervention and Control Group

Weight	Intervention (n=30) Mean±SD	Control (n=30) Mean±SD
Pre test	4140,00±681,580	3813,33±621,307
Post test	5320,00±729,383	3930,00±514,044

Based on table 2, it can be seen that the average weight of infants during the pretest in the intervention group was 4140.00 ± 681.580 and in the control group is 3813.33 ± 621,307. Meanwhile, the average weight of infants posttest in the intervention group was 5320 ± 729.383 and in the control group was 3930.00 ± 514.044.

Difference Between Baby Weight Pretest and Posttest on Intervention and Control Group

Table 3. Differences Between Baby Weight Pretest and Posttest on Intervention and Control Group

No.	Group	Readiness	Values mean	Improvement Value Mean	p value
1	Intervention	Pretest Posttest	4140,00 5320,00	1180,00	0,000
2	Control	Pretest Posttest	3813,33 3930,00	116,67	0,064

Based on table 3, it can be seen that value the mean of pretest and posttest knowledge variables were 4140,00 grams and 5320.00 grams, respectively, with an increase in the value mean of 1180,00 grams. Meanwhile, the results of the statistical test with the paired t-test resulted in a p-value of 0,000 (<0,05). This means that there is a significant difference between baby massage videos and stories about weight gain before being given baby massage (pretest) and after being given baby massage (posttest) in the intervention group.

It can also be seen that the mean pretest and posttest values of the baby weight variables in the control group were 3813,33 grams and 3930.00 grams, respectively, with an increase in the value mean of 116,67 grams. Meanwhile, the results of the statistical test with the paired t-test resulted in a p-value of 0,064 (p >0,05). This means that there is no significant difference in body weight at the first visit (pretest) and the second visit (posttest) in the control group.

DISCUSSION

Characteristics of Respondents

Age

The results of this study indicate that most of the respondents were 1 month old with a total of 21 babies (70,0%) in the intervention group and almost all of the respondents were

1 month old with a total of 24 babies (80.0%) in the control group. Infants are children aged 0-12 months.

The process of growth and development runs very quickly and for this period to develop optimally, proper stimulation is needed from an early age to avoid growth disorders. This stimulation can be given to infants aged 1-2 months to optimize their basic needs. Therefore, age can be the basis of reference for growth and development in infants.

Gender

Based on the results of the study, most of the respondents were female with 17 infants (56,7%) in the intervention group and male sex with 17 infants (56,7%) in the control group.

Growth is a physical change wherein the size and structure of the body increases in part or all of the body of an individual. Growth is the process of increasing the size and number of cells and intracellular tissues that can be measured quantitatively. While development is the increase in more complex body functions in gross motor skills, fine motor skills, speech and language, as well as socialization and independence[10]. According to Oktiawati, the factors that influence growth and development include genetic factors which include normal, pathological innate factors, gender, and ethnicity[11].

Birth Weight The

Results showed that almost half of the respondents with a birth weight of 2700 grams and 3000 grams were 6 babies each (20,0%) in the intervention group and a birth weight of 4000 grams with a total of 8 babies (26, 7%) in the control group.

Body weight is a measure of anthropometric increase or decrease in all body tissues which is an indicator in knowing the nutritional state of children. Body weight is the most important anthropometric measure and should be measured at every opportunity to check the health of children in all age groups. Body weight is one of the parameters that gives an idea of body mass. Body mass is very sensitive to sudden changes, for example due to infection, decreased appetite or decreased amount of food consumed so that birth weight also affects body mass images and indicators to determine the nutritional state of children[12].

Baby Weight Distribution Based on *pretest* and *posttest* intervention group and control group

Results showed that the frequency of initial body weight(pretest) in the intervention group, namely with a value mean of 4140,00 ± 681,580 grams and the control group with a value mean of 3813,33 ± 621,307 grams. While the posttest in the intervention group with a

value mean of 5320,00 ± 729,383 and in the control group with a value mean of 3930,00 ± 514,044.

Based on these results, it can be seen that there is no significant difference between the weight of the respondents in the intervention group and the control group at the pretest.

Based on these results, it can be seen that there was an increase in the average weight of the respondents during the posttest in the intervention group and the control group. There was also a difference in the average body weight between the two groups at the posttest, where the mean score of the intervention group was higher than the control group. This is because the control group was not given any media regarding infant massage stimulation movements and only given health education in the form of lectures and brief discussions related to daily baby care in supporting growth and development provided by researchers.

This also proves that video media can improve the ability of parents in giving baby massage stimulation that supports increasing baby's weight. The researcher assumed that there was homogeneity between the two groups when the conducted pretest was. This is because the majority of respondents do not have knowledge and information related to the stimulation of baby massage movements both through information and experience in caring for babies. This condition also benefits researchers to avoid bias at the time of the posttest. In addition, from the results of weighing at the pretest with the observations on weighing at the posttest in the intervention group after being given a cheerful baby massage video media, respondents who received an intervention in the form of a baby massage video were more able to increase the baby's weight compared to the control group.

This is in line with the research of Sri Handayani and Rasumawati (2018), thatthe average baby with the age of 5,5 months and mothers who do not work has an increase of 0,80 kg. The p value = 0,0001 which means that there is an increase in the baby's weight witha family approach through baby massage[9]. Baby massage is a form of alternative medicine that is becoming increasingly popular because of its simplicity, cost effectiveness, easy to learn and can be done at home by the family, but many mothers are have not been able to do baby massage independently[13].

In this study using video media in the form of a baby massage video “Ceria” where cheerful is an abbreviation of the Story of Mother and Child Bond because basically media video is one type of audio-visual media that can describe an object that is moving at once with the appropriate sound. Video capabilities provide an image and sound that has its own charm. Videos also convey information, explain processes, explain complex concepts, teach skills and influence attitudes[8].

This “Ceria” baby massage video is a video made by the researcher himself. Contains the stages of baby massage according to the SOP accompanied by songs created by researchers who are expected to make baby's parents easily understand the stages of baby

massage and can do it at home. At the time of the research, the parents of the babies were very enthusiastic about doing baby massage while singing the song in the cheerful baby massage video, making it easier for parents to remember each stage. The baby's parents also said that they often repeated watching the video when they did their own baby massage at home so that the baby's massage skills continued to improve and the implementation of baby massage carried out at home was always in a pleasant state between parents and babies.

Differences in Mean Pretest and Posttest Weight of Infants in the Intervention and Control Group The

Results of this study indicate that the average weight of respondents in the intervention group has increased from pretest to posttest. The results of the paired t-test resulted in a p-value of 0,000. This means that there is a statistically significant difference related to the average weight of respondents in the intervention group from pretest to posttest ($p < 0,05$). This also shows that the “Ceria” baby massage video media is able to provide an understanding of the stages of baby massage for the parents of the respondents so that giving baby massage as a stimulation touch can increase the baby's weight.

In line with the results of research by Zahra Akbarian Rad, et al (2020) which stated that each of the 20 respondents in the intervention and control groups showed that there was an effect of baby massage on increasing body weight in LBW with a p value of $0,007 < 0,05$[14].

According to Marianty (2014) baby massage has been used for treatment and has been a routine part of baby care for hundreds of years in many cultures and is one of the oldest therapeutic techniques in the world[13].

The mechanism of baby massage that determines the benefits of baby massage, one of which is increasing the activity of the vagus nerve. This is because babies who are massaged experience increased levels of absorption enzymes and insulin so that the absorption of food juices becomes better. As a result, babies become hungry quickly and therefore suckle more often, thereby increasing milk production so that the baby's appetite will also increase which can directly increase the baby's weight[6]

CONCLUSION

There is a significant difference in the average body weight of respondents in the intervention group from pretest and posttest, while there is no significant difference in the average weight of respondents in the control group from pretest and posttest.

REFERENCE

1. Harahap NR. Pijat Bayi Meningkatkan Berat Badan Bayi Usia 0-6 Bulan. J Kesehat Prima. 2019;13(2):99.

2. WHO, UNICEF. Reaching the Every Newborn National 2020 Milestones Country Progress, Plans and Moving Forward [Internet]. 2017. 2015–2018 p. Available from: http://apps.who.int/iris/bitstream/10665/255719/1/9789241512619-eng.pdf?ua=1
3. Kementerian Kesehatan RI. Profil Kesehatan Indonesia 2018 [Internet]. 2018. 496 p. Available from: website: http://www.kemkes.go.id
4. Kementerian Kesehatan Republik Indonesia. Profil Kesehatan Indonesia 2016 [Internet]. Profil Kesehatan Provinsi Bali. 2016. 1–220 p. Available from: http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/Profil-Kesehatan-Indonesia-2016.pdf
5. Kementerian Kesehatan Republik Indonesia. Laporan Kinerja Kementrian Kesehatan Tahun 2020. Kementeri Kesehat Republik Indones Tahun 2021. 2021;1–224.
6. Aulia S. Senam dan Yoga Sehat untuk Bayi agar Tumbuh Kembang Maksimal. Yogyakarta: Araska; 2015.
7. Sasube LM, Luntungan AH. Asupan Gizi Pada 1000 Hari Pertama Kehidupan.
8. Arsyad A. Media Pembelajaran. Jakarta: Raja Grafindo Persada; 2011.
9. Handayani S, Rasumawati. Peningkatan Berat Badan Bayi dengan Pendekatan Keluarga Melalui Terapi Pijat. Pus Unggulan Teknol Kesehat Fis Poltekkes Kemenkes Jakarta I. 2018;
10. Adriana D. Tumbuh Kembang dan Terapi Bermain pada Anak. Jakarta: Salemba Medika; 2011.
11. Dewi R, Oktiawati A, Saputri L. Teori dan Konsep Tumbuh Kembang Bayi, Toddler, Anak dan Usia Remaja. Yogyakarta: Nuha Medika; 2015.
12. Sri Wahyuni R, Septalia Dale D. Pemeriksaan Pertumbuhan Tinggi Badan Dan Berat Badan Bayi Dan Balita. Celeb Abdimas J Pengabdi Kpd Masy [Internet]. 2019;1(1):15–20. Available from: http://journal.lldikti9.id/CER/index
13. Marianty DS. Faktor-faktor yang Mempengaruhi Pengetahuan Ibu terhadap Pijat Bayi Usia 0-12 Bulan di Komplek TNI AL Sabang. Skripsi STIKES U'Budiyah. 2014;2013–5.
14. Fatmawati N, Zulfiana Y, Pratiwi YS. The Effect of Baby Massage on Improvement Baby Weight. J Qual Public Heal. 2021;4(2):227–32.