EXPERIMENT OF UV AND BABY MASSAGE USING BABY OIL AND BABY SKIN CARE

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Abstract

Objective: With baby massage and exposure to UV rays can provide enormous benefits on the growth and development of the baby both physically and emotionally so that it will increase weight and prevent the possibility of growth and developmental disorders problems in the baby.
Methods: Analytical research type of quasy experimental research was in the form of a non-equivalent control group with 2 groups, namely the treatment and control groups. Respondents were babies aged 0-4 months. The research instruments were UBaMa guides and tools and materials for baby massage and exposure to UV rays. The baby's mother was given an explanation and demonstration of how to massage the baby and give exposure to UV rays using the UBaMa guide. The baby was massaged every day by the baby's mother, once a week in the evaluation of how to massage and give uv light exposure by the midwife and the baby is weighed. After the data was collected, namely during the pretest, posttest 1 and posttest 2 were analyzed with Repeat Measurement (GLM) for each group, and between groups with the T test.
Results: 20 study subjects in the treatment group, the age was at most 2 months, which was 40%, and the same sex between men and women was 50% each. Of the 20 subjects in the control group study, the most age was 2 months at 50%, and the most gender was male at 55%. The normality test with the Kolmogorof Smirnov test of the treatment group had a normal data distribution with a value of p=0.635 (p>0.05) and the control group also had a normal data distribution with a value of p=0.977 (p>0.05). After the levene homogeneity test, the results were obtained that the data were homogeneous with a value of p=0.572 (p>0.05). The results of the paired T test concluded that there was a significant difference in the average weight gain between the treatment group before getting treatment (Mean=4217.5) and after getting treatment (Mean=60018), p=0.000. The results of the unpaired T test can be concluded that there was a significant difference in the average increase in body weight between the control group that did not get the treatment (Mean=439.60) and the treatment group given the UBaMa method (Mean=439.6), p=0.000. The results of the General Linear Model test can be concluded that there is a noticeable (significant) difference in average weight gain over time, baby massage and exposure to ultraviolet rays can increase the baby's body weight by 867.9 grams within one month and 1784.3 grams within two months.
Conclusion: There was a significant difference in the average increase in body weight between the control group that did not get the treatment and the treatment group given the UBaMa method.

Keywords: baby massage; ultraviolet (UV); growth

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1. Introduction

One of the SDG's goals is to ensure a healthy life and improve the well-being of the entire population of all ages. By providing quality and affordable health services, it will improve welfare. One of the traditional ways that Indonesians often do to maintain baby health is by touch therapy. The practice of drying babies is also a long-standing activity and is widely practiced by the community. This therapy is quite effective, efficient, economical and safe. The role of parents is needed in providing stimulation to the baby so that it can increase the growth and development of the baby. In order to create communication between parents and babies through a touch of massage that contains elements of affection, voice, eye contact, and movement. Massage and exposure to UV rays to the baby can involve close the closest family to bring the emotional connection closer, for example, father, grandmother, grandfather. A baby's instincts can respond to the touch of his mother as an expression of love, protection, and care [1].

Baby massage will stimulate increased activity of the vagus nerve which will lead to better absorption of the digestive system, so that the baby will be hungry faster and the frequency of breastfeeding the baby will be more frequent which in turn will produce more milk. According to some research results with a good frequency of breastfeeding, which is around 8-12x / day, it will increase weight and prevent possible problems with growth and development disorders in infants [2]. In order for the results of baby massage to be more optimal, before massage the baby is smeared with baby oil so as to make the baby more comfortable because it is slippery and there is no excessive pressure.

Exposure to UV rays also has a good role in supporting the growth of the baby. The best sunbathing time to increase vitamin D is between 9 a.m. and 10 a.m., a maximum of 15 minutes or until the skin begins to reddish 2-3 times per week. Vitamin D is one of the vitamin intake needed for children and adults. Vitamin D needs must be met properly so that the body can absorb calcium and phosphorus for healthy bones and teeth. In addition, adequate intake of vitamin D in children can affect children's growth and development. In order to provide more optimal UV exposure, previously babies were given baby skin care lotion to prevent dryness of the skin (maintain skin moisture) and prevent sunburn [3]. The problem is that not many parents know about stimulation in babies in the form of baby massage and exposure to UV rays that can be done by parents themselves with the right techniques in order to provide benefits in increasing the growth and development of the baby.

2. Methods

Study Desain

Analytical research with quasy experimental (pseudo-experimental) non-equivalent control group design using two groups, namely the treatment group and the control group [4].

Participants

The sample in this study was a portion of the number of infants aged 0-4 months in the work area of the Magetan District Health Office. The sampling method uses purposive sampling technique, which is a sample determination technique with certain considerations based on predetermined inclusion and exclusion criteria. Inclusion criteria: newborns are quite months old, normal weight (> 2500 grams and < 4000 grams), healthy babies (no abnormalities) and exclusive breastfeeding. Using Federer's formula, the results of 20 babies were obtained as a sample of the control group and 20 babies in the treatment group.

Instruments

The instruments used in this study were guidelines for the UBaMa method, LCD and projector, base and baby oil for baby massage, baby scales, infantometer, observation sheet and baby skin care lotion.

Data Collection

Data collection for the experimental group began with socializing and training the baby's mother to perform the UBaMa method. After training the baby's mother is asked to carry out treatment on the baby with the guidance of the UBaMa method. After 1 month the treatment is measured growth, the measurement is repeated again after 2 months. After all the collected data is entered in the master data. The data from the growth screening results are collected and then included in the master table. The control group measured growth in the 1st month and the 2nd month without treatment.

Data Analysis

SPSS version 26.0 was used for the data analysis, with statistical significance set to <0.05. Data analysis for growth differences was carried out 3 times, namely pretest, posttest 1 and posttest 2 with Repeat Measurement (GLM / General Linear Mode) for each group, while between groups used the T test [4].

Ethical Considerations

Ethical issues (including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors. This study had been evaluated by the health research ethics committee "Poltekkes

Kemenkes Surabaya" with No.EA/491/KEPK-Poltekkes_Sby/V/2021. In addition, a consent form was obtained from all the participants prior to data collection.

3. Results

Characteristics of the Participants

Based on the results of the study, it was found that out of 20 study subjects in the treatment group, the age was at most 2 months, which was 40%, and the same sex between men and women was 50% each. Of the 20 subjects in the control group study, the most age was 2 months at 50%, and the most gender was male at 55%.

Analysis results

T Test

To perform the independent sample t-test, the completeness of the data must meet the requirements of the parametric test. The requirements for paramatic tests include: random sampling, the data obtained from the sample has a normal distribution (normal distribution) with a normality test, homogeneous data and the number of samples of each subject is the same [5]. After a normality test with the Kolmogorov-Smirnov test, the treatment group had a normal data distribution with a value of $p = 0.635$ ($p>0.05$) and the control group also had a normal data distribution with a value of $p = 0.977$ ($p>0.05$). After the levene homogeneity test, the results were obtained that the data were homogeneous with a value of $p = 0.572$ ($p>0.05$).

1. Paired sample t-test
   The results found that there was a significant difference in the average weight increase between the treatment group before getting treatment (mean = 4217.5) and after getting treatment (mean = 60018), $p = 0.000$. It can be concluded that there are differences in the average weight gain before and after treatment
2. Independent sample t-test
   It can be concluded that there was a significant difference in the average weight gain between the control group that did not receive treatment (mean=439.60) and the treatment group given the UBaMa method (mean=439.6), p=0.000.

General Linier Model

The General Linear Model test was used to analyze the difference in early western weight growth, the first month after treatment, and the second month after treatment [6].

The normality test through Kolmogorov-Smirnov was not qualified because the sample size was less than 50, so it was continued with the Shapiro wilk test. All variables were normally distributed due to the value of $p>0.05$ with an initial weight result with p-value = 0.072; body weight after the first month treatment with p-value = 0.055 and body weight after treatment in the second month p-value = 0.151. Furthermore, a general linear hypothesis test of the Greenhouse-Geisser model was carried out, it was known that the p-value of greenhouse-geisser Sig value was 0.000 (<0.05), then it can be concluded that using the UBaMa method guidelines it is really able to increase the baby's weight.

4. Discussion

The results of the analysis of the study above show that there is a difference in average weight gain between babies who are treated with the UBaMa method (giving UV rays and baby mass) and babies who do not get the UBaMa method treatment. This is in accordance with WHO data in 2017 which states that the incidence of infant weight in the world is still substandard, namely >5% with a prevalence of underweight in Southeast Asia of 26.9%. One of the efforts to optimize the baby's weight in addition to the nutrients provided, one of which is the need for a stimulus with baby massage [7]. The results of this study are in accordance with the results of research conducted by Carolin et al. [8]. The results showed that there were differences in pretest and posttest results in each intervention group and control group, there was an effect of giving baby massage on the baby's weight. The improvement of health status in babies can be seen from the indicators of weight gain. Growth stimulation will be maximized if supported by other stimulation in the form of baby touch or massage. Massage is one of the techniques that combines the physical benefits of human touch with emotional benefits such as inner bonding (bounding). The benefits of baby massage in the massage manual by Rusli include increasing weight, promoting growth, increasing endurance, increasing baby concentration, and making babies sleep more deeply and fostering a bond of parental and child affection (bounding) [1]. The results of this study are in line with the results of a study conducted by Ayuningtyas (2016) which states that babies who get massage have a better quality of sleep compared to babies who do not get massage [9]. Good sleep quality is essential for everyone in improving physical and mental health, because good sleep is essential for growth especially for babies. There is an effectiveness in increasing baby weight with baby massage [10].

The results of this study are also in accordance with the results of the 2022 PERDOSKI (Association of Dermatology and Venereology Specialists) study on the effect of ultra violet rays on health. UV rays are needed for health maintenance and immunity so that they can ward off infections [11]. UV rays can form provitamin D which can improve health status [11]. This research is in accordance with the results of a study conducted by Mulyani (2021) which states

that there is a difference in time with the optimum length of sunbathing to meet the needs of vitamin D [12]. The best sunbathing time to increase vitamin D is between 09.00 to 10.00, a maximum of 15 minutes or until the skin begins to redness in 2-3 times per week [12]. Vitamin D is one of the most needed vitamin intakes for children and adults. The need for vitamin D must be met properly so that the body can absorb calcium and phosphorus for healthy bones and teeth. In addition, a well-fulfilled intake of Vitamin D to children can affect children's growth and development [13]. The implementation of stimulation using the UBaMa (Ultraviolet and Baby Massage) method guide can increase the baby's weight by 867.9 grams within one month and 1784.3 grams within two months [13]. The more stimulation given in supporting the growth and development of children, the better the results will be. By combining stimulation in the form of UV light exposure and baby massage, it can increase the baby's growth more optimally. It is hoped that the use of baby oil and baby skin care can contribute to increasing discourse on the use of chemical substances for the health of the human body, in addition to their use in other ways such as for organ reconstruction [10], as well as for other purposes [14].

5. Conclusion

UV light exposure and baby massage using baby oil and baby skin care carried out regularly by mothers using UBaMa guidelines can increase the baby's weight.

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