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Effectiveness of premature infancy in the face of an increase in fibers in the NICU room In Awal Bros Hospital

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ABSTRACT

Background: Indonesia ranks the fifth out of 10 countries that are at risk of preterm birth. There are many factors can lead preterm birth. Babies born prematurely have weight below average with less than 2500 grams and are also at risk of complications. Complementary therapy can be taken as the action for premature babies to gain weight. One of the therapy is massage therapy. The aim of this research is to show weight gaining of premature babies before and after having the massage therapy in intervention groups and comparing them with control groups. This research was conducted at NICU of Awal Bros Hospital Bekasi**. The research method:** the research design used in this study is Pre-experimental with a nonequivalent control groups approach using pre and post test with 36 babies as the samples. The purposive sampling was used as the sampling method in this research in order to study the differences before and after the treatment of Wilcoxon Match Pair Test and Mann-whitney test**. The results** of the study, the score of P value = 0,000 so it can concluded that there are signifycant differences in premature babies' weight before and after having the massage therapy. The score of P value = 0,000 that can concluded that there are also significant differences in premature babies' weight after having the massage therapy in intervention groups with control. **The conclusion** is that there are significant differences in premature babies' weight before and after having the massage therapy at NICU of Awal Bros Hospital Bekasi and there are also differences in premature babies' weight afer having the massage therapy in intervention groups and control groups at NICU of Awal Bros Hospital Bekasi. The suggestion is that this therapy can be used as the alternative for the weight gaining treatment nursing premature babies.

Keyword: Body Weight, Premature Baby, Massage Therapy.

1. Introduction

Every year, an estimated 15 million babies are born prematurely (before the age of 37 weeks), one million children die each year from complications of premature birth, and many premature babies in life suffer from disabilities. Generally speaking, premature babies are the leading cause of death for children under the age of five. Premature babies can occur for a variety of reasons, most of which are more than one pregnancy, infections and chronic diseases such as diabetes and hypertension. (WHO, 2018).

A critical period in the development of premature babies where infancy is the golden age because this period of the baby lasts very short and cannot be repeated.

Achieving optimal growth and development is the result of the interaction of various interrelated factors, namely genetic, environmental and behavioral factors, as well as stimulus or stimulation. (Sunarsih, 2010).

According to Roesli (2015) baby massage is the oldest known human touch therapy most popular. Baby massages have long been done almost all over the world, including in Indonesia, and are inherited downwardly.In Indonesia, the implementation of baby massage in the village community is still held by babysitters. During this time the massage is done not only when the baby is healthy, but also in the sick or sick baby and has become a routine of baby care after birth.

Baby massage as one of the forms of touch language turns out to have a positive effect on baby growth and development. A premature baby's touch is a painful touch or a negative touch so that he is afraid of being touched. Thus, it is imperative to introduce a positive touch, that is, a baby massage in premature babies as soon as possible (Roesli, 2015). Modern health science has scientifically proven that touch therapy and massage in babies has many benefits especially when done by the parents themselves. Research on the effect of baby massage on baby weight gain has found that in the control group weight gain is 6.16%, compared with 9.44% in the massaged group. (Dasuki, 2013)

According to research by T.Field and Scafidi (1986 and 1990), 20 premature babies (weight 1.280 and (1.176 grams), who were massaged for 3 times 15 minutes for 10 days, had an increase in weight of 20% - 47% per day, more than those who were not massaged, and in comparison with the one-to-three-month-olds who were massageed for 15 minutes twice a week for six weeks, they had more weight gain than the control babies. (Roesli, 2015).

From the results of the preliminary survey that the researchers did in the start room of the Hospital of the Early Bros Bekasi on December 30, 2019, researchers obtained information from the head of the room that the baby massage was only done on babies enough months while baby massage at the start of the hospital has never been done.

2. Methods

Research Design The design used for this research is pre and post experimental, which is a design that attempts to reveal a causal and consequential relationship by involving a control group beside the experimental group with a pre-test and post-test design.

Population and Research Samples

The population in this study is the total of premature babies treated in the Nicu Room of the Awal Bros Hospital of Bekasi. which amounted to 36 people from December 2019 to February 2020. The sample in this study was 16 premature babies in the control group and 16 prematures in the intervention group in the start room of the Early Bros Bekasi Hospital. The sample sampling technique uses a purpose-sampleing approach, which is a sample-setting technique by selecting samples from populations according to the researchers' wishes (aims, problems in the research), so that the samples can represent previously known population characteristics.

As for the sample criteria in this study are: healthy premature babies with no complications, premature Babies whose parents are prepared to undergo meditation, prematures weighing between 1500 and <2500, prematures whose body temperature is between 36-37oC, prematurity whose breathing is 40-60 x/minute, prematuras whose infusions are not used, Premature Babys whose sucking reflexes are strong.

3. Results

The data is tested using statistical tests, i.e. t-dependent tests, to compare weight gain before and after measurement and obtained mean differences pre-test and post-test, and t-independent, to Compare weight in control and intervention groups. Guidelines in accepting the hypothesis: when the probability value of (p) < 0.05 then Ho is rejected, when (P) > 0.05, then Ho fails to reject. The data obtained is presented in table form.

Univariat Analysis Research Results

This univariate analysis aims to describe the characteristics of each variable studied. Numerical data is searched for mean and standard deviation. Respondent characteristics from gestational age data include birth weight.

Univariat Analysis

Table 5.1 Distribution of age of premature gestation of babies treated at Nicu Early Bros Bekasi Hospital (N=36)

Gestational Age	Minimum	Maximum	Mean	Std.Deviation
Intervention	30	37	34.56	1.886
Control	31	36	34.17	1.383

The average gestational age of premature babies in the intervention group was 34.56 with a standard deviation of 1.886. Thus, the age of gestation in the youngest intervention groups was 33 weeks and the maximum gestation age was 37 weeks. In the control group, the average was 34.17 with the standard deviations of 1.383.

Table 5.2 Weight distribution of premature babies prior to massage in the intervention and control groups treated at Nicu Early Bros Bekasi Hospital (N=36)

Weight	Minimum	Maksimum	Mean	Std.Deviasi
Intervention	1235	2460	1799.17	371.445
Control	1345	2460	1708.94	279.066

The results of the analysis of the weight of the baby obtained prior to the injection of premature babies, the minimum weight in the intervention group is 1235 grams and the maximum weight is 2460 grams.

Table 5.3 Weight distribution of premature babies after massaging in intervention groups and control groups treated at Nicu Early Bros Bekasi Hospital (N=36)

Weight	Minimum	Maksimum	Mean	Std.Deviasi
Intervention	1200	2505	1859.00	385.932
Control	1300	2430	1703.33	284.202

The results of the baby's weight analysis obtained after the measurement of premature babies are, the intervention group weighs a minimum of 1200 grams and a maximum of 2505 grams, whereas in the control group the minimum weight is 1300 grams with a maximum weight of 2430 grams. Weight gain is still ongoing. There needs to be one more study after the 7th day to indicate how much of the weight given therapy will decrease or stabilize. By doing this in premature babies, it is expected that the complications that will arise at the time of growth will be reduced, or will not occur at all. The weight gain that occurs in the intervention group is one of the benefits of talk therapy. This has been proven by the results of the study, the average weight after talk therapies in intervention groups is larger than in the control group.

4. Discussion

Bivarian Analysis

Normality Test Data

Table 5.4 Results of Pre-Test and Post Test Normality tests with Intervention and Control Groups for Massage in Premature Babies (18)

	Range	Minimum	Maximum	Mean	Std. Deviation	P Value
	Statistic	Statistic	Statistic	Statistic	Statistic	
BB pre intervensi	1225	1235	2460	1799.17	371.445	0,200
BB ppost intervensi	1305	1200	2505	1859.00	385.932	
BB pre control	1085	1345	2430	1708.94	279.066	
BB post control	1130	1300	2430	1703.33	284.202	

Based on table 5.4 above showed the results of the Shapiro-Wilk normality test in the pre- and post-intervention group of premature babies given massages and in pre and post control group of normality tests produced with normal results. There were 18 babies in the pre-intervention group before measuring with the weight deviation standard of 371,445

grams and after measuring the post intervention group obtained the standard weight deviation of 385,932 grams. Then in the Pre-Control group the standard weight deviations of 279,006 grams were achieved and after 7 days the post-control group received the standard body weights of 284,202 gram. Thus, it can be concluded that there was a difference in weight before and after the massage in the intervention groups with a weight difference of 14,487 grams increase in weight experienced in premature babies and the female weight difference in the control group of 5,196 grammes, so that the weight increase in babies who received the massage had a higher average than in the controlling group.

Paired Simple t-test

The paired sample T-test is performed to determine the comparative analysis of the differences between two pairs of samples with the assumption that the data are distributed normally.

Table 5.5

Analysis of comparisons before and after giving premature baby massage in early 2020 N (18)

		Paired Differences			
		Mean	Std. Deviation	Std. Error Mean	P value
Pair 1	BB pre intervensi - BB ppost intervensi	-59.833	40.213	9.478	0,000
Pair 2	BB pre control - BB post control	5.611	23.106	5.446	

Analysis of comparison of pre- and post-massage delivery to premature babies against baby weight in intervention groups and control groups at the Brothers Bekasi Early Hospital 2020 with a sample of 36 respondents. A P value of 0,000 < 0.05 means that there is a difference in the weight of premature babies before and after breastfeeding. Based on the Paired T-Test study, the results were obtained that there is an effect of giving a baby massage on the increase in weight of premature babies.

Table 5.6

Influence of premature baby weight after massage on intervention groups and control groups in premature babies treated at Early Bros Bekasi Hospital

		Mean	N	Std. Deviation	Std. Error Mean	P Value
Pair 1	BB pre intervensi	1799.17	18	371.445	87.550	0,000
	BB ppost intervensi	1859.00	18	385.932	90.965	
Pair	BB pre control	1708.94	18	279.066	65.776	

2	BB post control	1703.33	18	284.202	66.987

Seeing from table 5.6, the average weight prior to oral therapy in 18 premature babies in the intervention group was 1799.17 grams with a standard deviation of 371.445, whereas in the 18 prematures in the control group that is, 1708.94 grams in the standard 279.066. And obtained a p value of 0,000 thus it can be concluded there is a difference in the group given therapy with the control group. Univariat Analysis Results of Analysis of the Age of Pregnancy of Premature Babies Treated at Nicu Early Bros Bekasi Hospital.

The age of gestation in the youngest intervention group is 33 weeks and the maximum gestation age is 37 weeks. In the kintrol group the average is 34.17 with the standard deviation is 1.383. So in the control group the younger age is 33 and the oldest age is 35 weeks. Thus, the earliest gestational age in the careful respondents is 33 week and the highest is 37 week.The behavior of a neonate before giving stimulation is heavily influenced by the condition of the newborn at birth. Premature babies referred to different behavior during the first study and this was influenced by gestational age factors (Depkes RI, 2016), birth weight (Markum, 2012) and gender (Depkes, RI, 2016; Foremen, Thomas& Blackburm, 2013) Grunau, Weinberg & Whitfield (2004) classified the gestational age into three groups: 33 - < 37 weeks of gestation, 29 - 32 weeks of very low gestationalage, and 28 weeks of gestation. (extremely low gestational age). The behavior that occurs in neonates depends on the gestational age. The younger the gestational age of the neonates, the behavior that emerges also indicates that they are at high risk. Neonates have difficulty adapting to the environment outside the uterus and performing basic survival functions. The age of gestation is one of the internal factors that influence the growth of the baby.

Children with premature birth are at risk of learning difficulties and behavioral problems. Therefore, to prevent medical complications and developmental delays in children born prematurely, intensive watering in babies is necessary, such as sensory stimulation in infants from an early age, by giving stimulation of speech during nursing. (Mokhtar Malekpour, 2014).Premature babies are born with a weight of less than 2,500 grams. Preterm babies have less weight at birth because they have intrauterine growth disorders or shortened gestational age. Common causes of BBLR are glucose intolerance during pregnancy, maternal militus diabetes, overnutrition, and also heredity. Besides, BBLRI births are also associated with multiple fetal pregnancies, different twin pregnances, congenital anomalies, high rubella infection, and intrauterine infections. (Johnston, Flood & Spinks, 2013).

The results of the baby's weight analysis obtained before a loan operation was performed on premature babies at Nicu Early Hospital Bros. The minimum weight in the intervention group was 1235 grams and the maximum weight was 2460 grams.The results of this study are not in line with the results of the study carried out by Imelda 2018. The average weight in the pre-therapy intervention group was 1359.3, while in the control group the average weight before intervention was 1421.5. The occurrence of premature birth is caused by several factors, including the mother's, fetal, and socio-demographic factors.

Mothers' conditions that often cause premature birth include malnutrition, a history of premature childbirth, antepartum hemorrhage, early ruptured cavity (CPD), abnormalities of the uterus, hydramnion, heart disease, hypertension or other chronic diseases, the mother's age is less than 20 years or more than 35 years, pregnancy and delivery is too close, severe preeclampsia and eclamsi, carioamnionitis, infection, trauma and others, while of the conditions of the fetus that can lead to premature delivery are fetal anemia (anemia, hypoxia, acidosis or fetal heart disorder), intrauterine infections, delayed fetal growth (PJT), and gestation. This includes socio-demographic factors, including psychosocial factors. (kecemasan dan depresi, stres,pekerjaan ibu, merokok, alkohol, berat badan ibu sebelum hamil, pertambahan berat badan selama kehamilan, komposisi diet, dan aktivitas seksual). Demographic factors (mother's age, marital status, socio-economic conditions, racial and ethnic factors) (Krisnadi,Pribadi Adhi, 2014).

Of the various factors that arise during pregnancy can lead to premature birth, so premature babies have to adapt to physiological changes to adapt the environment from intrauterine to extrauterine, problems of babies born less than a month and the baby's weight less than 2500 may experience several problems including unstable body temperature, respiratory disorders, Premature babies are born with a weight of less than 2,500 grams. Preterm babies have less weight at birth because they have a developmental disorder. Digestive disorders and nutritional problems, immature liver, anatomically and functionally immature kidneys, immunological disorder, intraventricular bleeding, and retrolental fibroplasia.

5. Conclusion

Based on the results of a study carried out on 18 premature babies treated at the West Bekasi Early Bros Hospital in 2020. From the data analysis results, there is an increase in the weight of premature babies. There was a significant difference in premature babies before and after the massage in the intervention group p value= 0,000. It can be concluded that premature baby weight gain can improve physiologically. This research can add insight and knowledge in the application of baby massage, a form of complementary therapy that can be done by a nurse with one of the roles of a child nurse as a care provider. (pemberi perawatan utama).

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