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Effect of kangaroo method care accompanied by mozart classical music therapy on weight gain in LBW babies at H. Abdul Manan Simatupang Hospital Kisaran 2023

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ABSTRACT

Kangaroo method care is a method of care by caring for the baby in a naked state (only wearing diapers and hats) placed upright/vertical on the chest between the two breasts of the mother (mother bare chest) then covered (Triana et al, 2015). This research method uses the Quasi-Experimental method, with the design of One Group Pretest-Posttes Without Control. The population of this study amounted to 20 LBW babies using a purposive sampling technique. The research instrument used an observation sheet. Data analysis techniques using descriptive analysis and chi-square test. The results of the study There is an effect of the kangaroo method accompanied by Mozart classical music therapy on increasing body weight in LBW babies at HAMS Hospital Kisaran in 2023 with a p-value = 0.000 (p <0.05). These results prove that the kangaroo method accompanied by Mozart classical music therapy is proven to influence increasing the body weight of LBW babies at HAMS Hospital in Kisaran in 2023. It is concluded that there is an effect of the kangaroo method accompanied by Mozart's classical music on increasing the weight of LBW babies. Suggestions for this study are expected to health services and health workers, especially midwives, are expected to provide education and practice about the kangaroo method accompanied by Mozart classical music to increase the weight of LBW babies and are expected to be a consideration for midwifery services to make music therapy as an obstetric intervention.

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INTRODUCTION

Infant Mortality Rate (IMR) is one of the main indicators to assess the level of public health. One of the causes of the high infant mortality rate (IMR) is low birth weight (LBW) in newborn babies. In 2018, there were 18 neonatal deaths for every 1,000 live births. The high maternal mortality rate (MMR) and infant mortality rate (IMR) are caused by the problem of maternal complications (UNICEF, 2019 in Isnaini et al., 2021).

The World Health Organization (WHO) estimates that 20 million births worldwide, which equates to 15.5% of all births, result in LBW each year, with developing countries accounting for

96.5% of these cases. In developing countries such as Indonesia, the prevalence of LBW is still relatively high (Perwiraningtyas et al., 2020).

Kangaroo Method Care (FMC) has been shown to benefit both parents and infants. Assistance that is often used in care in the newborn intensive care unit includes music therapy and FMD. Many studies have been conducted on nurses who have used FMD in LBW or preterm populations for a long time, and the results are physiologically beneficial. If music therapy is added to FMD for LBW babies, the impact of therapy on parents will be more pronounced (Olii, N., 2019).

Music therapy is a successful treatment to alleviate physical, psychological, social, and spiritual problems in life, and provide comfort (Rahmawati, 2018). Neuroendocrine and sympathetic nervous system activity will be reduced by music, which will lower heart rate, pulse, and respiratory rate. Music of all genres, including classical, popular, and relaxation songs, can be utilized as therapy. However, songs or music with a speed of about 60 beats per minute are highly recommended (Putriana, 2018).

Based on the results of an initial survey conducted on March 07, 2023, at HAMS Hospital in Kisaran in the Perinatology room, data on the incidence of LBW in 2022 were 185 (15.2%) patients, with 64.9% of births using the sectio caesarea method, while normal delivery was 35.1%, with an average monthly number of 16 (8.6%) LBW babies out of a total of 1215 births. Whereas in the last 3 months of 2023, the incidence of LBW decreased to 30 (14%) patients, with a monthly average of 10 (33.3%) patients out of a total of 215 births.

The therapeutic benefits of Mozart's classical music have been shown to help improve physical, psychological, social, and spiritual health. According to research, the tone and sound of music correspond to brain vibrations so that it can improve brain function better (Darma, I., Y., et al., 2022). Research by Wahyuningsih Sri (2014) in Yeyen (2022) in Malang also stated that the provision of classical music therapy had an effect on increasing body weight in infants (p=0.01).

Low birth weight infants (LBW) are an important concern in neonatal care. LBW is defined as a baby who has a birth weight of less than 2500 grams. The term LBW is often associated with prematurity but also includes full-term infants with a birth weight below 2500 grams (Sinta et al., 2019). LBW conditions can be caused by premature birth or stunted growth in the womb, where the baby is small for gestational age (Kurniasih et al., 2017).

Various factors contribute to LBW, including maternal, fetal, environmental, and placental factors (Jitowiyono & Weni, 2018). Maternal factors such as age, parity, education, and nutritional status play an important role. Similarly, fetal factors such as congenital abnormalities and infections in utero can cause LBW (Pantiwati, 2021). Environmental factors, such as living in high altitudes, exposure to radiation, and toxic substances, also play a role (Jitowiyono & Weni, 2018).

LBW can have both short-term and long-term effects. Short-term problems include unstable body temperature, respiratory distress, digestive and nutritional problems, immunological disorders, intraventricular hemorrhage, retinopathy from prematurity, and risk of bleeding due to fragile blood vessels (Sinta et al., 2019). On the other hand, long-term impacts include psychosocial problems, impaired growth and development, speech and communication difficulties, neurological and cognitive disorders, chronic lung disease, visual and hearing impairment, and congenital abnormalities (Izzah, 2018; Khoiriah, 2017).

To address the challenges faced by LBW, two potential methods have emerged, namely the Kangaroo Method of Care (FMC) and Mozart classical music therapy. The FMD method involves placing the baby bare-chested on the mother's skin to maintain body temperature and enhance the bond between mother and baby. This method can be applied intermittently or continuously depending on the baby's condition (Triana et al., 2015).

Mozart classical music therapy has been recognized for its positive effects on individuals of different ages, including LBW. The calming and distracting composition of Mozart's classical music can reduce pain intensity, stress, and anxiety levels, thereby improving physiological and psychological well-being (Solehati & Cecep, 2017).

Studies have shown that the combination of FMD and Mozart classical music therapy is beneficial for LBW. It improved growth, heart rate, oxygen saturation, and reduced hospitalization duration compared to infants who did not receive music therapy (Isnaeni & Yanuar, 2018). In addition, this combined approach is more efficient than the use of incubators, reduces the risk of infection, strengthens the bond between mother and baby, and provides a calming environment for the baby, resulting in better sleep (Anantasari et al., 2019).

Thus, this study aims to explore the impact of the FMD method and Mozart classical music therapy on LBW, especially on growth and general well-being, in an effort to improve neonatal care and development.

RESEARCH METHOD

This study used the Quasi-Experimental method with a Group Pretest-Posttes Without Control design (Sugiyono, cited by Agustina. Y, 2018). The study population consisted of all LBW babies (Low Birth Weight) who were admitted to the perinatology room of HAMS Hospital in Kisaran in 2023, with a total of 20 LBW babies. The sampling technique used was purposive sampling. Data collection was done using primary data. The measuring instrument used is an observation sheet to obtain information about the increase in body weight in LBW babies while undergoing kangaroo method treatment accompanied by Mozart classical music therapy. The data collected will be processed using SPSS software version 20. Data analysis will use quantitative analysis methods to obtain the desired research results.

RESULTS AND DISCUSSIONS

Based on the results of research in the perinatology room of HAMS Hospital Kisaran in 2023, it is known that the data on the characteristics of respondents based on the age of the baby, and gender was obtained from 20 respondents.

Table 1. Age of LBW Infants in the Perinatology Room at HAMS Hospital in Kisaran in 2023

Variables	Total	Average	Lowest age (days)	Highest Age (days)
Infant Age	20	4,40	1 day	7 day

Table 1 shows the characteristics of respondents based on the age of the baby. The average age of LBW infants was 4.40 days, with the lowest age being 1 day and the highest age being 7 days.

Frequency Data of Weight Gain in LBW Infants Before and After Providing Kangaroo Method Care Accompanied by Mozart Classical Music at HAMS Hospital Kisaran Year 2023

Table 2: Frequency of Weight Gain in LBW Infants Before and After Kangaroo Method Care Accompanied by Mozart Classical Music Therapy at HAMS Hospital, Kisaran, 2023

LBW Baby Weight	Mean	Weight Gain	Min - Max
BW Before	2070 gr	182 gr	1700 – 2500 gr
BW After	2252 gr		1850 – 2600 gr

Bivariate Analysis

Data analysis of the test of the effect of the kangaroo method accompanied by Mozart classical music therapy on increasing body weight in LBW babies at HAMS Hospital in Kisaran in 2023 used t-tests with the following analysis results:

Table 3. Effect of Kangaroo Method Accompanied by Mozart Classical Music Therapy on Weight Gain in LBW Infants at HAMS Hospital Kisaran in 2023

Time	Mean	SD	Min-Max	p-value
BW Before Treatment	2070 gr	247,3	1700 – 2500 gr	0,000
BW After Treatment	2252 gr	234,1	1850 – 2600 gr	

Table 3. shows that based on pre-test data, the average baby weight before treatment was 2070 grams and the average baby weight after treatment was 2252 grams. The statistical results of the t-test showed that there was a significant difference between the weight of LBW babies before and after the kangaroo method accompanied by Mozart classical music therapy with a p-value < α (0.000 < 0.05).

Weight Gain in LBW Infants Before and After Kangaroo Method Care Accompanied by Mozart Classical Music Therapy at HAMS Hospital in Kisaran 2023.

The results of data analysis of the average pre-test weight of LBW babies before treatment was 2070 grams. The results of the average body weight of LBW babies before treatment and observation of the baby's organ functions including the baby's suction reflex are still weak, this is what affects body weight due to the lack of nutritional intake, while newborns need adequate nutrition so that a treatment is needed that can help improve the suction reflex in babies, one of which can be given Mozart classical music therapy.

The results of the post-test average body weight data analysis showed that after the Mozart classical music therapy was given, there was an increase in body weight in LBW babies, namely 182 grams (medium) with an average of 2252 grams and all of them experienced an increase in body weight in LBW with a percentage of 100%.

The results of this study are in accordance with previous research and several theories. This study is in accordance with research conducted by Sumawidayanti, 2015. The study was conducted to determine a significant increase in the weight of LBW babies through Mozart classical music therapy and the results of the study showed that there was a difference in the weight of LBW babies in the pretest and posttest in the treatment group (P value 0.033).

The Effect of Kangaroo Method Accompanied by Mozart Classical Music Therapy on Weight Gain in LBW Infants at HAMS Hospital Kisaran in 2023.

The results of the analysis of the difference in average body weight between the treatment group and the control group after being given Mozart classical music therapy showed that there was a significant difference between the difference in average body weight between the two groups with a p-value < α (0.000 < 0.05). Based on this significant difference, Mozart's classical music therapy can be used as a nursing intervention in the care of LBW babies, especially in LBW babies whose suction reflexes are still weak.

Based on the results of the research conducted, Mozart's classical music therapy has an effect on increasing the body weight of LBW, The group with Mozart's classical music therapy intervention mostly experienced an increase in body weight of 100 grams for 5 days and all experienced an increase in body weight with a percentage of 100%. In the group without Mozart classical music therapy, a small portion experienced an increase in body weight of 50 grams for 5 days and almost all experienced an increase in body weight with a percentage of 90%.

Mozart classical music therapy was given for 40 minutes per day and repeated for 5 days in the Perinatology Room of HAMS Hospital in Kisaran. Mozart classical music therapy has a rhythm, melody, and high frequency that can stimulate creativity and motivation of the brain then stimulate ACTH stimulus so that an increase in body weight occurs. The increase in body weight besides being given Mozart classical music therapy can also be influenced by breastfeeding and formula milk. The increase in body weight in LBW is possible because classical music therapy can provide a calm

feeling to the baby so that the baby sleeps more. If the baby sleeps more, it will be able to reduce energy expenditure so that it can maintain weight stability.

CONCLUSION

Based on the presented results and discussions, this study concludes with two main findings: Firstly, the weight of low birth weight (LBW) infants exhibited a significant increase before and after receiving kangaroo care accompanied by Mozart classical music therapy, showing an average gain of 182 grams (medium). Secondly, the combined approach of kangaroo care and Mozart classical music therapy demonstrated a substantial effect in augmenting the body weight of LBW infants, supported by a p-value of 0.000 ($p < 0.05$). These outcomes validate the efficacy of integrated kangaroo care and Mozart classical music therapy in promoting weight gain among LBW infants treated at HAMS Hospital in Kisaran during the year 2023. From these findings, several recommendations are put forth: Firstly, healthcare practitioners, especially those dealing with infant care, should disseminate information about the benefits of Mozart classical music therapy as an effective intervention to facilitate weight gain in LBW infants, subsequently integrating this therapy into their caregiving practices. Secondly, educational institutions should encourage nursing students to further explore additional advantages of Mozart's classical music therapy in the context of LBW infants' care. In-depth research can offer deeper insights into the positive influences of music therapy on LBW infants. Lastly, for future researchers, it is advised to conduct similar studies to investigate the impact of Mozart's classical music therapy on LBW infants' weight gain. Additionally, upcoming research endeavors should account for potential environmental factors that might influence the outcomes of the therapy, thus ensuring a more comprehensive and nuanced understanding of its effects.

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