

EFFECTIVENESS OF MALAY MUSIC INSTRUMENTAL AND THE MUSIC OF MOZART AND OXYGEN SATURATION BEHAVIORAL SLEEP-AWAKE LOW BIRTH WEIGHT BABIES IN HOSPITAL DR. SOEDARSO PONTIANAK

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ABSTRACT

The stability of the oxygen saturation and increased sleep-awake behavior in the care of an infant development outcomes of low birth weight (LBW). The study design was a randomized controlled trial with cross-over design. 16 LBW samples are selected by consecutive sampling technique. Data were analyzed by paired t test and One Way ANOVA. Paired t test analysis results showed that there were significant effects of Mozart's music to the Malays and stable oxygen saturation and increased sleep-awake behavior LBW ($p < 0,05$). One Way ANOVA analysis results showed on stage after the administration of the music and the difference (difference) that occurred between the groups showed no significant effect ($p > 0,05$) on the stability of oxygen saturation and sleep-awake behavior LBW. Giving music as a complementary therapy in the nursing interventions can minimize the noise environment and supportive nursing baby stabilizing oxygen saturation and increased sleep-awake behavior.

Keywords:

low birth weight babies; Malay music; Mozart's music; behavioral sleep-awake; oxygen saturation

Preliminary

Low birth weight infants born at this time is an important issue that should be prioritized to be faced, especially in achieving the Millennium Development Goals (MDGs) in the fourth indicator is to reduce child mortality by two-thirds by 2015. Low birth weight births accounted for the high mortality rate of newborns. WHO in 2011 reported that of the death of the neonatal period, 70% occurred in infants with low birth weight (LBW) whereas when age until the age of 1 year mortality of LBW infants was 20 times normal (Perinasia, 2011). In the world, every year there are about 15 million babies are born prematurely. Reports Born too soon: The Global Action Report on Preterm Birth name one of 10 babies born prematurely in the world and the rate of preterm birth has increased in almost all countries. LBW births almost half of all newborn deaths worldwide and is currently the second leading cause of death in children under the age of 5 years, after pneumonia (WHO, 2012).

Low birth weight infants require quality and quantity of sleep that well. Energy expenditure naturally when the baby breaks (Resting Energy Expenditure or REE abbreviated) can be

minimized, so that the energy can still be saved and used for metabolic processes to achieve optimal growth and development. Good quality baby bedding can also be illustrated through the oxygen saturation value, which is expected during the baby in sleep oxygen saturation were within normal ranges. Research conducted by Arnon, et al. (2006) suggested that when the baby is asleep in quiet sleep cycle (deep sleep), the baby of oxygen saturation increased to 94% from the previous state when the baby is awake (awake) is 91%.

Oxygen saturation should be maintained in the normal range along with the quantity and quality of sleep-waking behavior is good because it is an outcome in the care of the development (developmental care) in low birth weight infants so that babies can catch up in growth and development issues (National Association of Neonatal Nurses, 2004). Achievement of optimal growth and development is not something that is impossible for low birth weight babies. This can be achieved with great concern of nurses towards the achievement of these objectives by providing effective stimulation of growth and development including through the provision of complementary therapies. Complementary therapies are defined by the National Center for Complementary and Alternative Medicine (NCCAM) one of which is music therapy (Kenner & Lott, 2007). Music played to babies can describe the infant's ability to detect sound patterns quickly thus increasing the infant's ability to localize the meaning of the language (Kraus, 2011, in Wolf et al., 2011). Music is an auditory stimulus to cause a complex neurological process. Music causes activation of several brain regions process the prefrontal cortex, paralimbic and area neokortikal (Blood et al., 1999; Blood & Zatorre, 2001, in Walworth, 2012).

Instrumental music therapy with the use of Malay is an application form from the application of the Transcultural nursing theory. Giving music as a nursing intervention Instrumental Melayu is expected to become effective nursing care. Nursing care given to low birth weight babies through the provision of developmental care (developmental care) using Malay Instrumental music therapy is a picture that nursing as a humanistic art and skill will always be sensitive to the culture to achieve optimal health and welfare for low birth weight babies .

Audiotori stimulation through music therapy Malay expected to stabilize the oxygen saturation value and improve the behavior of the sleep-awake baby. Based on the phenomenon above, the researcher is interested through this study to determine whether there are differences in oxygen saturation and sleep-awake behavior between intervention groups Malay Instrumental music, Mozart's music intervention group and the control group without music in low birth weight infants.

Theoretical Overview

Music is a kind of nursing interventions and complementary therapies that can cure by deliberately using auditory stimuli to confer benefits on the physiological outcomes of low birth weight babies (Kemper & Danhauer, 2005, in Thomas, 2010). In this study instrumental music therapy and music Mozart Malays in low birth weight infants in the perinatology with the aim to improve the homeostasis thus helping to avoid the effects of LBW care environment so that unwanted babies experiencing physiological stress as indicated by the occurrence of oxygen desaturation, and disturbances in infant sleep-waking behavior (Neuman & Fawcett, 2002 in Thomas, 2010). The occurrence of oxygen desaturation and sleep disturbances in behavior-awake baby will hinder the achievement of optimal growth and development. Malay instrumental music therapy and Mozart will be able to stabilize the physiological function by increasing oxygen saturation and improve

sleep behavior awake so the impact to give peace to the baby, the baby recover and provide balance in the energy system of the baby so that the end with a stable physiological condition of the baby can catch lag in growth and development.

Music therapy is a therapeutic presence deliberate exchange of wave energy generated when the brain is given a stimulus it will give effect to the arrangements hypothalamic-pituitary-adrenal (HPA) axis, the sympathetic nervous system (sympathetic nervous system or abbreviated SNS) and the impact on immune system (Yamasaki, et al., 2012). Music is a unique auditory stimulus with a unique cause neurological process anyway. When listening to music, most of the parts of the brain activates several brain regions, namely the prefrontal cortex, and areas paralimbik neokortikal (Blood et al., 1999; Blood & Zatorre, 2001, in Walworth, 2012).

Research Methods

The research design will be used in this study using the approach of randomized controlled clinical trials (randomized controlled trial) using cross design (cross-over design). Cross design that will be used is cross design with three treatments, namely the intervention group A gain Malay Instrumental music therapy, group B for the music Mozart intervention and control groups C ie without music. At this crossing design each subject will be given two treatments and each subject will also be a control on himself. The order of the three treatment will be given to each subject in this study based on the results of randomization in blocks (block randomization) using a random number table. The research will be carried out for six days in a row on a single research subject. Each type of treatment (intervention or control) will be conducted over two consecutive days for each intervention.

Research on any treatment that intervention A, intervention B, and C controls will be carried out in three stages, namely the stage before (30 minutes), during the phase (30 minutes), after stage (30 minutes) so that the total time of data collection in a single day for one treatment is 90 minutes. Every 30 minutes (every stage) will be assessed and oxygen saturation every waking sleep behavior exactly 2 minutes 15 times for a total time of assessment so that the three stages of assessment will be conducted for 90 minutes 45 times in one day assessment data collection.

Results

Characteristics of respondents infants in this study is based on the gestational age 33,50 weeks of age with the lowest gestational age infants was 29 weeks and 37 weeks highs. The respondents to the average distribution of low birth weight infants by age when the study was 12,56 days with the lowest infant age was 7 days and the highest 21 days. The mean distribution of respondents for birth weight was 1753,12 grams birth weight respondents with the lowest and the highest is 1200 grams 2150 grams. Further to the average weight distribution time of the study respondents amounted to 1765,62 grams of weight low of research respondents when 1300 grams and 2250 grams of the highest weight. Distribution of respondents low birth weight babies by sex ie female infants were 9 infants (56,2%) and infant sex as much as 7 male infants (43,8%).

The mean oxygen saturation respondents on stage before treatment was 89,77%, on stage during the treatment was 87,46%, and the post-treatment phase, the mean oxygen saturation was 87,25% of respondents. The description of the behavior of the sleep-waking treatment lbw on three stages, namely the stage before the highest rates for the treatment of sleep-waking behavior is in active

sleep as many as 13,81 times and on stage for the treatment of behavioral quiet sleep as much as 15,23 times. In the post-treatment phase, the highest rates are behavioral quiet sleep as many as 13,88 times.

Before performing the bivariate analysis, it is necessary to see equality or homogeneity for the variable oxygen saturation and sleep-awake behavior variables between groups Malays, Mozart group, and control group were graded on a stage before treatment. Homogeneity test for variable oxygen saturation and sleep-awake behavior performed using One Way ANOVA statistical test. In Table 5,5 it can be seen the mean oxygen saturation values at the stage prior to treatment group was 89,75% Malays, Mozart group 89,38%, and 90,19% in the control group with the variance of data for oxygen saturation values in the three treatment groups had variance of the same data ($p > 0,05$). The average occurrence of behavioral quiet sleep, active awake, sleepy, quiet awake, and crying on the respondent before getting three treatments showed variance of data in all three treatment groups had similar data variance ($p > 0,05$).

Table 5.5
Homogeneity test of Oxygen Saturation and Sleep-Waking Behavior
Malay groups, Mozart Group and Control Group
in Hospital Dr. Soedarso Pontianak, in May-June 2013 (n = 16)

Variable	Group	Mean	SD	SE	95% CI	F	df	p value
Oxygen saturation	Malay	89,75	1,693	0,423	88,85 ; 90,65	0,999	47	0,376
	Mozart	89,38	1,746	0,437	88,44 ; 90,31			
	Control	90,19	1,424	0,356	89,43 ; 90,95			
Sleeping-Waking Behavior								
Quiet sleep	Malay	11,88	4,256	1,064	9,61 ; 14,14	0,003	47	0,997
	Mozart	11,81	5,600	1,400	8,83 ; 14,80			
	Control	11,94	3,415	0,854	10,12 ; 13,76			
Active sleep	Malay	14,50	5,610	1,402	11,51 ; 17,49	0,191	47	0,827
	Mozart	13,62	5,315	1,392	10,79 ; 16,46			
	Control	13,31	5,975	1,494	10,13 ; 16,50			
Slumber	Malay	1,56	3,010	0,753	-0,04 ; 3,17	0,394	47	0,676
	Mozart	1,25	2,887	0,722	-0,29 ; 2,79			
	Control	2,31	4,347	1,087	0,00 ; 4,63			
awake Calm	Malay	0,94	3,750	0,938	-1,06 ; 2,94	0,700	47	0,502
	Mozart	0,31	1,250	0,312	-0,35 ; 0,98			
	Control	0,00	0,000	0,000	0,00 ; 0,00			
Active awake	Malay	0,81	2,287	0,572	-0,41 ; 2,03	0,769	47	0,470
	Mozart	2,38	5,123	1,281	-0,36 ; 5,11			
	Control	2,44	4,633	1,158	-0,03 ; 4,91			
Cry	Malay	0,31	1,250	0,312	-0,35 ; 0,98	0,500	47	0,610
	Mozart	0,31	1,250	0,312	-0,35 ; 0,98			
	Control	0,00	0,000	0,000	0,00 ; 0,00			

Comparison of oxygen saturation on stage before (pre) and the phase after (post) in each group by using statistical paired t test. Based on Table 5.6 below shows that the average oxygen saturation in the Malay group is given before treatment was 89,75%, on stage 87,44% after treatment with oxygen saturation mean difference between respondents before getting treatment and after getting treatment at 2,3% . Based on the results of statistical analysis known that the difference in mean oxygen saturation values that occurred between the stages before and after the administration of the Malay music there is a significant difference ($p < 0,05$).

In the Mozart group, note that the average oxygen saturation was 89,38% before treatment, after treatment at this stage is 87,19%, with a mean difference between respondents oxygen saturation before getting treatment and getting treatment after ie by 2,2%. Statistical analysis showed that there were significant differences in mean oxygen saturation values between the phases before and after the administration of Mozart's music stage.

In the control group, it is known that the average oxygen saturation before treatment was 90,19% and the post-treatment phase is to be 87,12%, with a mean difference between respondents oxygen

saturation before getting treatment and after getting treatment that is equal to 3,1%. Statistical analysis showed that there were significant differences in mean oxygen saturation values between the phases before and after the phase perlakun in the control group.

Table 5.6
Comparison of Mean Oxygen Saturation Respondents
Before and After Stage Phase in Each Group
in Hospital Dr. Soedarso Pontianak, in May-June 2013 (n = 16)

Group	Mean	SD	SE Mean	MD (95% CI)	t	df	p
Malay							
Before	89,75	1,693	0,423	2,3 (1,2 ; 3,4)	4,363	15	0,001*
After	87,44	1,315	0,329				
Mozart							
Before	89,38	1,746	0,437	2,2 (1,1 ; 3,3)	4,289	15	0,001*
After	87,19	1,167	0,292				
Control							
Before	90,19	1,424	0,356	3,1 (2,3 ; 3,8)	8,267	15	0,000*
After	87,12	1,088	0,272				

Information: * significant at α 0.05

The mean value of oxygen saturation after stage (post-intervention) and the difference in oxygen saturation values between groups using One Way ANOVA statistical test is as follows:

Table 5.7
Mean Oxygen Saturation After Stage and Group Difference Between Oxygen Saturation
in Hospital Dr. Soedarso Pontianak, in May-June 2013 (n = 16)

Variable	Mean	SD	SE	95% CI	df	F	p
Phase after							
Malay	87,44	1,315	0,329	86,74 ; 88,14	47	0,307	0,737
Mozart	87,19	1,167	0,292	86,57 ; 87,81			
control	87,12	1,088	0,272	86,55 ; 87,70			
Difference							
Malay	2,31	2,12	0,53	1,18 ; 3,44	47	0,990	0,379
Mozart	2,19	2,04	0,51	1,10 ; 3,27			
control	3,06	1,48	0,37	2,27 ; 3,85			

In Table 5.7 note that the average oxygen saturation current stage between groups after treatment showed that the average value of oxygen saturation in three groups: 87,44% Malays, 87,19% Mozart group, and a control group of 87,12%. Based on the results of statistical analysis known that there is no difference in oxygen saturation values at getting Malay Instrumental music, Mozart, and when no music ($p > 0,05$). As for the difference in oxygen saturation values before treatment and after treatment between the groups according to the above table it can be seen that there is a difference in the Malay group oxygen saturation value of 2,3%, in the Mozart group differences occurred at 2,2%, and in the control group differences occurred at 3,1%. Statistical analysis showed that the difference in oxygen saturation values that occurred in the three groups showed that there is no difference or a significant difference between the three groups ($p > 0,05$).

The average sleep-awake behavior in the Malay group is for restful sleep before treatment is given is 11,88 times and an increase in the post-treatment phase is to be 13,38 times the mean difference between before getting treatment and after getting treatment at -1,5 times. Based on the results of statistical analysis known that there are no significant differences in mean sleep quietly on stage before and after the administration of the Malay music. On the behavior of active sleep is known that the average occurrence of active sleep behavior before treatment is given is 14,50 times and a decrease in post-treatment phase is to be 3,31 times the mean difference between before and after the administration of the Malay music is by 11,2 times. The statistical results showed that there were significant differences between the mean active sleep behavior before and after the administration of the Malay music ($p < 0,05$). Next is known for quiet awake behavior that the average behavior of the calm before the treatment was maintained at 0,94 times and an increase in the phase after the administration of the Malay music by 12,88 times the mean difference between before and after treatment was -12 times. These results indicate that there are significant differences between the mean quiet awake behavior before and after the administration of the Malay music ($p < 0,05$).

In the Mozart group behavioral active sleep in mind that the average occurrence of active sleep behavior before treatment is given is 13,62 times and a decrease in post-treatment phase is to be

3,56 times the mean difference between before and after the administration of the Malay music is by 10,1 times . The statistical results showed that there were significant differences between the mean active sleep behavior before and after the administration of Mozart's music ($p < 0,05$). On the behavior of active sleep is known that the average occurrence of active sleep behavior before treatment is given is 13,31 times and a decrease in post-treatment phase is to be 3,38 times the mean difference between before and after treatment is by 9,9 times. The statistical results showed that there were significant differences in the mean active sleep behavior between before and after treatment with no music ($p < 0,05$).

At the next table is also known that the average behavior of the sleepy before treatment was 2,31 times and a decrease in post-treatment phase of up to 0 times the mean difference between before and after treatment was 2,3 times. Statistical analysis showed that there were significant differences between the mean sleepy behavior before and after the control treatment ($p < 0,05$). Next is known for quiet awake behavior that the average occurrence of quiet awake behavior before treatment is 0 times and an increase in the post-treatment stage at 12,50 times the mean difference between before and after treatment is equal to -12,5 times. These results indicate that there are significant differences in the mean quiet awake behavior between before and after treatment with no music controls ($p < 0,05$).

In the above table is also known that the average active waking behavior before treatment was 2,4 times and a decrease in post-treatment phase of up to 0 times the mean difference between before and after treatment was 2,4 times. Statistical analysis showed that there were significant differences between the mean active waking behavior before and after the control treatment ($p < 0,05$).

The mean behavior restful sleep that occurs in the Malay group is 13,38 times, the Mozart group and control groups had the same average of 14,12 times that happens, the test results showed that there was no statistically significant difference in the occurrence of quiet sleep in infants after getting Malay music, Mozart, and after no music ($p > 0,05$).

The mean occurrence of awake quiet in Malay groups Occurred at 12,88 times, 11,88 times in the Mozart group, and the control group of 12,50 times. Based on the results of statistical tests known that there was no significant difference in the occurrence of post-baby get quiet awake Malay music, Mozart, and after no music ($p > 0,05$). As for the behavior of two other behavioral sleep-awake the sleepy and crying behavior was not observed in Infants on stage after the administration of Malay music, Mozart, and after the baby is given without music.

Table 6.3
Sleep-Awake Respondent Behavior After Interagency Group Stage
in Hospital Dr. Soedarso Pontianak, in May-June 2013 (n = 16)

Variabel	Rerata	SD	SE	95% CI	df	F	P
Quiet sleep							
Malay	13,38	3,304	0,826	11,61 ; 15,14	47	0,279	0,758
Mozart	14,12	3,481	0,870	12,27 ; 15,98			
Control	14,12	3,030	0,758	12,51 ; 15,74			
Active sleep							
Malay	3,31	5,474	1,368	0,40 ; 6,23	47	0,008	0,992
Mozart	3,56	6,261	1,565	0,23 ; 6,90			
Control	3,38	5,365	1,341	0,52 ; 6,23			
slumber							
Malay	0,00	0,000	0,000	0,00 ; 0,00	47	.	.
Mozart	0,00	0,000	0,000	0,00 ; 0,00			
Control	0,00	0,000	0,000	0,00 ; 0,00			
awake Calm							
Malay	12,88	7,438	1,859	8,91 ; 16,84	47	0,071	0,931
Mozart	11,88	7,293	1,823	7,99 ; 15,76			
Control	12,50	7,933	1,983	8,27 ; 16,73			
Active awake							
Malay	0,44	1,750	0,438	-0,50 ; 1,37	47	0,500	0,610
Mozart	0,44	1,750	0,438	-0,50 ; 1,37			
Control	0,00	0,000	0,000	0,00 ; 0,00			
Cry							
Malay	0,00	0,000	0,000	0,00 ; 0,00	47	.	.
Mozart	0,00	0,000	0,000	0,00 ; 0,00			
Control	0,00	0,000	0,000	0,00 ; 0,00			

Mean Difference Between Waking Sleeping-Behavior Group is among the Malays, Mozart group, and a control group using a One Way ANOVA statistical test is as follows:

Table 6.4
The mean difference Sleep Behavior Inter-Maintained Respondent Group
in Hospital Dr. Soedarso Pontianak, in May-June 2013 (n = 16)

Variabel	Rerata	SD	SE	95% CI	df	F	P
Quiet sleep							
Malay	1,5	4,6	1,1	-0,96 ; 3,95	47	0,115	0,892
Mozart	2,3	5,4	1,3	-0,54 ; 5,17			
Control	2,2	5,5	1,4	-0,73 ; 5,10			
Active sleep							
Malay	11,1	9,7	2,4	6,0 ; 16,36	47	0,66	0,936
Mozart	10,1	11,2	2,8	4,05 ; 16,07			
Control	9,9	11,1	2,8	4,00 ; 15,87			
Slumber							
Malay	1,6	3,0	0,8	-0,04 ; 3,17	47	0,394	0,676
Mozart	1,3	2,9	0,7	-0,28 ; 2,79			
Control	2,3	4,3	1,1	-0,00 ; 4,63			
Awake Calm							
Malay	11,9	9,8	2,4	6,74 ; 17,13	47	0,048	0,953
Mozart	11,6	7,9	1,9	7,34 ; 15,78			
Control	12,5	7,9	1,9	8,28 ; 16,72			
Active awake							
Malay	0,38	2,1	0,5	-0,74 ; 1,49	47	1,054	0,357
Mozart	1,94	5,2	1,3	-0,82 ; 4,69			
Control	2,44	4,6	1,1	-0,03 ; 4,90			

In Table 6.4 note that the difference between restful sleep behavior before treatment and after treatment between groups note that the Malay group increased by 1,5 times tranquil sleep, occurred in the group of Mozart increased by 2,3 times, and increased in the control group occurred at 2,2 times. Statistical analysis showed that the increase in the occurrence of quiet sleep behavior that occurs among the three groups showed that there is no meaningful distinction or difference in behavior restful sleep when the baby gets the Malay music, Mozart, and when no music ($p > 0,05$).

In the quiet moments before sleep behavior treatment and after treatment between groups note that the Malay group increased by 11,9 times, in the Mozart group the increase was of 11,6 times, and occurred in the control group increased by 12,5 times. Statistical analysis showed that the increase in the quiet awake behavior that occurs among the three groups showed that there is no meaningful distinction or difference in behavior restful sleep when the baby gets the Malay music, Mozart, and when no music ($p > 0,05$).

Discussion

In this research note that the provision of Malay music has the same effectiveness with Mozart music gift to the attainment of the stability of the oxygen saturation. The effectiveness is demonstrated by the significant differences in low birth weight infants among Malay music and the stage before and after the given Mozart and Mozart Malay music given by a mean difference of 2,3% and a value of $p = 0,001$.

The result is in contrast to the results of research conducted by Arnon et al., In 2006 that conducts research on the effect of live music (live music) to the physiological and behavioral responses of

premature infants to sleep-awake. In the research it can be seen that the average value of oxygen saturation on stage before the administration of 91% music, on stage during the music provision to 89%, and at the stage after the administration of a 94% music. The statistics analysis results to changes in oxygen saturation values during the three phases of this shows that there is no significant difference of mean oxygen saturation between the three phases of this measurement ($p > 0,05$).

Given the differences in the type of music that could be a factor that influences the effectiveness of a given music to babies of low birth weight on physiological function. According to Neal and Lindeke (2008) the choice of music as a nursing intervention for premature infants should pay attention to the principle of benefits such as simplicity of music, rhythm is soft, lyrical melody should, harmonization of simple tones, and soft tones. In this study the researchers chose to use Malay Instrumental music Instrumental music is because this is the music that comes from a mother softly singing while going to euthanize her. Interest researchers to compare the effectiveness of Malay music with the kind of music that has been proven memberiken positive effects of preterm infants is Mozart's music can be answered through this research that the Malay music has the same effectiveness with Mozart's music. These results can also be seen from the value of the difference or the difference in value of oxygen saturation that occurs when a baby is given Malay music and when the baby was given to Mozart's music which both showed results that the decrease in oxygen saturation value is not meaningful.

Effectiveness of music on the development of neurobehavior system through sleep-awake behavior can be seen in the comparison of the behavior of the sleep-awake on stage before and after the given stage Malay music and the music of Mozart, with the result that there are significant differences in two similar behavior is the behavior of active sleep awake and calm behavior. The decrease in active sleep behavior and increased quiet awake behavior is an idea that giving music as a stimulus audiosensori pathways associated with activation of the system-the brain pathways neurobehavior system. Brain pathway activation leads to energy exchange resulting from brain waves, resulting in the setting hypothalamus axis, sympathetic nervous system, activates several brain regions such as the prefrontal cortex, and areas paralimbik neokortikal and eventually lead to stability and homeostasis in the body of the baby (Yamasaki et al., 2012).

The results of similar studies prove that music affects the infant neurobehavior function is research conducted by Arnon et al., (2006) in 31 preterm infants by providing three types of interventions against the respondents, with music games directly given to infants (live music), provision of music by listening to music recording, and without giving the music. The results obtained at that stage 30 minutes before administration of the intervention showed no significant difference from the three treatments were given. Scores of behavior shows the results of the slow decline in the baby while getting the music games directly. Significant decrease occurred in stages after therapy where baby can reach quiet sleep at minute 25, while granting intervention by listening to recorded music and no music no effect on physiological and status perilaku. amasaki et al., 2012).

In this study have similarities with the research conducted by Arnon is doing music therapy with two types of music by the stage before stage time, stage during, and after the stage. Effectiveness of each study music in different looks depending on the time of measurement. In the present study

found significant differences of the effects of Malay music on oxygen saturation value when viewed by phase before and after the administration of each group but when seen on stage after the treatment of the three interventions and see the difference or time difference before and after the intervention delivery the results obtained are the oxygen saturation in the range of the normal range, but the decrease was not significant. In the study the effectiveness of each stage Arnon intervention visits based on time (minutes) but in this study the researchers did not look in detail up to the measure of time.

Music as a nursing intervention has many proven interventions have a positive effect on the development of physiological functions and systems neurobehavior in low birth weight babies one of which is music as therapy is a form of auditory stimulus capable of inducing brain plasticity baby through the formed elements such as melody, rhythm, harmony and tone (Kemper & Danhauer, 2005; Standley, 2001, in Muensa 2012). Plasticity that occurs in the brains of infants of low birth weight is a picture of the capacity of the central nervous system to adapt and modification on the structural and functional organization of the needs, which can be ongoing as needed and or stimulation. The complex mechanisms involved in the plasticity of the brain is composed of nerve chemical changes, electrical nerve, nerve acceptance, changes in neurons and nerve neural reorganization (Kraus, 2011, in Wolf et al., 2011). E measure of time.

In this study, sleep-awake behavior is observed through the six-item behavior based on the status of sleep-awake using the Brazelton's State Scoring System is a quiet sleep, active sleep, drowsy, quiet awake, active awake and crying. Effectiveness Malay music and Mozart's music on the behavior of the sleep-awake baby can be seen from the behavior of active sleep and quiet waking. Proven effectiveness Malay music by being able to reduce infant behavioral active sleep from 14,50 times to 3,31 times with a decrease of 11,2 times, so the Malay music gives significant differences in the behavior of active sleep time before low birth weight babies get Malay music and after getting the Malays music with a value of $p = 0,000$.

Sleep-awake status on low birth weight babies is an important aspect in the development of the neurobehavior showed the effectiveness of the response to stimuli in the surrounding environment. Sleep-awake state is a behavior that tends to occur simultaneously and describe the level of waking the baby, how the baby reacts to external stimuli as well as describing the fundamental activation of the central nervous system.

Infant sleep-waking behavior during this study can be seen through the frequency of sleep state and awake baby's status based on the stage musical treatment before the intervention or control was given, during treatment or control music, and also after the treatment or control music. Of all stages and types of treatment given can be seen an increase in the status of infant sleep and awake status that can be seen through increased status restful sleep, active sleep decreased, decreased drowsiness, increased quiet awake, active awake decreased, and the status of crying decreased.

Sleep and waking behavior shows that the noise that occurs in the behavioral treatment greatly affects the sleep-awake baby. Environmental noise transferred through the provision of care Malay music and Mozart in the intervention group and the control group using the headset showed that infants can be minimized with environmental noise with baby care shown to achieve restful sleep and awake restful sleep and reduced active, active awake, sleepy, and crying.

Quiet sleep is described with the loss of limb movement and respiratory status occurs regularly. On the occurrence of a movement to sleep calm tone at the level of tonic motor survived in this quiet sleep state. Behaviors such as choking, yawning, mouth movements, exaggerated facial expressions, and movements that never take place in a quiet sleep state, but these behaviors appear on the status of active sleep (Holditch & David et al., 2003, in Kenner & Lott, 2007). Restful sleep needed by low birth weight babies to rest, recovery, growth processes, and can cause respiratory status more regularly. Nursing a quiet environment affecting low birth weight infants in quiet sleep mecapai behavior in the environment during treatment. Quiet sleep is non-rapid eye movement sleep (NREM) ditemukan where no eye movement during the baby is in the bed. Sleep quietly began developing at the age of 32-35 weeks gestation (Berkowitz, 1996, in Idriansari, 2011). Characteristics of brain waves that emerge through the EEG during quiet sleep is the slow wave (delta waves) occurring less than 3,5 cycles per second.

According to Kenner and Lott (2007) status of the master bedroom in premature infants is an active sleep state. Active sleep when the baby is sleeping there are still some body movement, there is rapid movement of the eyelids (rapid eye movement), eye twitching and can move behind the eyelids, facial expressions can smile and sound cranky, when stimuli appear, the baby can stay in a state of active sleep, back to quiet sleep, waking up sleepy, weak muscle tone between body movement. active sleep began to appear on the gestational age between 28 to 30 weeks. Active sleep is a picture of the occurrence of brain activation that causes the maximum if done recording brain waves (EEG) showed a beta waves (14 cycles per second) low voltage (Graven & Browne, 2008, in Idriansari, 2011).

Neonatal nurse requires great attention to the sleep-awake status shown by infants. Some cardiovascular function, respiratory, neurological, and endocrine systems differ gastrointestinal found in each sleep-waking state. In addition, sleep-waking state is a picture of infant responses to nursing interventions (Johnston et al., 1999; 1988 in Kenner & Lott, 2007). Quiet sleep is described with the loss of limb movement and respiratory status occurs regularly. On the occurrence of a movement to sleep calm tone at the level of tonic motor survived in this quiet sleep state. Behaviors such as choking, yawning, mouth movements, exaggerated facial expressions, and movements that never take place in a quiet sleep state, but these behaviors appear on the status of active sleep (Holditch & David et al., 2003 in Kenner & Lott, 2007). Restful sleep needed by low birth weight babies to rest, recovery, growth processes, and can cause respiratory status more regularly. Nursing a quiet environment affecting low birth weight infants in quiet sleep mecapai behavior in the environment during treatment.

Sleep-awake behavior that occurs in low birth weight babies are also affected by the type and time of the stimulus in the environment deperoleh baby care. Nursing interventions given the potential for improving the status of organizational behavior or it may interfere with the behavior of the status of the organization. Four types of nursing interventions that generally affect the status of the sleep-waking behavior is a routine baby nursing actions diruang perinatology, action procedures that cause pain, social interaction, and the stimulus given to the baby.

Stimulus coming from the nursing environment such as noise may be inappropriate for the development of premature infants because it can cause irregularities and awake baby's sleep

patterns. Changes in sleep-awake status of preterm infants occurs six times in every hour, and 78% of these changes are influenced by nursing interventions and noise wards (Zahr & Balian, 1995, in Kenner & Lott, 2007). Premature infants are rarely able to survive in quiet sleep while in the nursing interventions and would usually wake up when there is intervention. Normally premature babies spend only a little time in the awake state, but that is just the opposite is usually the baby will have maintained that status more often when with nurses. Other stimuli that also affect the regularity of sleep-awake state behavior of a baby is a baby's room lighting and position.

Premature infants are a high risk infants and very dependent on the environment early in life that the nursing environment. Appropriate nursing environment is expected to be given to premature babies to maintain physiological function, growth and development, and provide an opportunity to arrange or organize the status, behavior, and social reaction. Physiological immaturity and instability of neurobehavior in preterm infants are particularly vulnerable to the surrounding environment, especially an environment that does not favor the emergence of organizational behavior of the sleep-awake state. The system needs to maturity neurobehavior in premature infants should be given the care environment is to provide an environment that is able to enhance and support the capability aspects of infant development and protecting the infant from excessive sensory stimuli and minimize stressors.

Conclusion

Music therapy as a complementary therapy in development to support the care of low birth weight babies achieve the stability of the oxygen saturation and increased sleep-awake behavior. The stability of the oxygen saturation and increased sleep-awake behavior is a very important requirement for growth and development stages of low birth weight babies so demanding roles and responsibilities of the nurse to understand the influence of environmental noise stress experienced by nursing the baby, so the impact on oxygen saturation instability and an increase in sleep-waking behavior.

Infants when given Malay music, Mozart's music, and when the baby is not given, shows that noise music that emerged from the nursing environment can be diverted through the provision of music that is played in the baby's ear and with the use of head set in the control group that serves as earplugs, so it can minimize the exposure of infants to the existing noise environment.

Malay Instrumental music has a value equal to the effectiveness of the classical music Mozart towards achieving restful sleep and awake behavior calm, so expect the use of Malay Instrumental music was introduced as part of music therapy for low birth weight babies. Tujuannya is to achieve nursing care based on the principles of cultural (Transcultural Nursing) to optimize the achievement of growth and development through the achievement of stability and increased oxygen saturation sleep-awake behavior in the care environment.

Suggestion

Malay Instrumental music can be used as a complementary therapy in the care of LBW development to help achieve stability in oxygen saturation and sleep-awake behavior. Care environment has a very important role to facilitate LBW in achieving stability and increased oxygen saturation sleep-awake behavior. Researchers recommend further studies in infants should

not be used as a control group using a head set so that it can be clearly seen how the nursing infant to the environment when using current music and without music.

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