

# **The Effect of the Combination of the Baby Spa Method and Mozart's Classical Music on the Gross Motor Development of Babies**

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## **Abstract**

Globally, about 20-40% of infants experience a process of developmental delay. This study aims to determine the effect of the combination of the Baby Spa method and Mozart classical music on the gross motor development of infants aged 3-6 months at the Bunda Riani Martbung clinic. This type of research uses quasi-experimental (pre-experimental designs) research design using two groups pretest-posttest. Population in this study were all babies aged 3-6 months who did a baby spa at the Bunda Riani Martbung clinic as many as 20 people. The number of samples as many as 20 respondents with a total sampling technique. Data analysis of this study used the Wilcoxon signed rank test ( $\alpha < 0.05$ ). The results showed that there was an effect of baby spa on baby's gross motor development ( $p=0.011$ ), baby's gross motor development with a combination of baby spa methods and Mozart classical music ( $p=0.005$ ). There is a significant difference between baby spa and Mozart's classical music combination method on gross motor development of infants aged 3-6 months with baby spa results  $\text{sig } 0.011 > \text{from } 0.005$ . The conclusion of this study is that there is an effect of the combination of the baby spa method and Mozart classical music on the baby's gross motor development. It is recommended that baby spa techniques and Mozart classical music be applied to babies to improve baby development.

**Keywords:** Baby Spa, Mozart Classical Music, Gross Motor

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## **Introduction**

Gross motor development in infancy is a priority for developmental tasks and is generally influenced by the maturity of infants (Puspita, 2013). Infancy up to 2 years is called the 1000-day period of birth, this period is the shortest period of all developmental periods, so it is very important to meet optimal nutrition and stimulation because, after this period is passed the brain will grow slow down and can never grow quickly again (Julianti, 2017). The process of child growth and development is an important thing that must be considered from an early age, considering that children are the next generation of the nation who have the right to achieve optimal development, so that children are needed with good quality for a better future for the nation. Golden Age is a critical period that occurs once in a child's life, starting from the age of 0-5 years. Children who have good early growth and development will become healthier

adults, influenced by the interaction of genetic factors and environmental factors, so that later they will have a better life (Prastiwi, 2019).

Development of growth and development can be done by providing stimulation and early detection of growth and development during the "Golden Age" by providing adequate early stimulation to stimulate the brain and development of movement, speech and language as well as socialization and independence of the baby so that it is optimal according to his age (Dahlan et al., 2021). Stimulation is intended to train the baby's ability so that the baby can master certain skills at the appropriate age, quite a lot of developmental delays occur only because of a lack of stimulation. Many abilities can actually be learned early on. Every child will go through a period of continuous growth and development from birth to adulthood. In the developmental period, there is a critical period that requires stimulation or stimulation that is useful for the child's development potential (Fauziah, 2020).

The growth in infants that is most easily seen by parents is gross motor skills in infants. Gross motor is a child's ability to move and control parts of the baby's body. The development of children's gross motor skills depends on the maturity of the brain, sensory system, increasing size which is a body movement using large muscles such as rolling, kicking, sitting and running (Naufal & Artika, 2019). To achieve optimal growth and development of infants, there are several factors that influence the growth and development of infants including the biological environment, physical factors, psychosocial factors, family factors and customs. One of the physical factors that can influence is the presence of stimulation. There are many ways of stimulation, for example, massage, Spa, (Solus per Aqua), educational game tools and others (Rahayu et al., 2015). Stimulation can be used to stimulate the baby's gross motor skills including: music, massage, gymnastics and so on.

Baby Spa (Solus Per Aqua) is a stimulation that is beneficial for the health of baby's development. Babies who are given spa therapy will look fresh, healthy, vibrant and growing. Baby spa is also one of the useful treatments as a medium that can stimulate baby's motor skills. By playing with water, the baby's muscles will develop very well, the joints will grow optimally, the body will grow and the body will be flexible. The baby's motor skills will develop faster than just playing on the floor because when swimming in water the effect of gravity is very low (Nugraeny, 2018). Age 3-6 months is a good time for babies to start doing baby spa. After the age of 3 months, neck control is good so that the baby's head can be upright. Babies have a pair of reflexes that can make them swim, namely the dive reflex and the swim reflex. When both the swimming reflex and the dive reflex are involved, babies can look like natural swimmers (Rahayu et al., 2015).

One of the things that affects growth is stimulation. Some guidelines for stimulating babies include vision stimulation, auditory stimulation, tactile stimulation or touch, and visual and motion coordination (Mahareni, 2017). In 1980 a physiologist Alfred Tomatis, researching about various sounds and musical notes. The result is that the best reception that can be given to babies is the mother's voice and Mozart-type classical music. The research was carried out using quite sophisticated medical equipment, namely Magnetic Resource Imaging (MRI) and Pasitron Emission Tomography (PET) scans (Alina, 2009). Bunda Riani Martbung Clinic is a private practice midwife clinic which also provides a baby spa located in the city of Medan, precisely in Martubung. The results of the initial survey conducted by researchers on babies 6 of 11 babies in the scope of the Mother Riani Martubung Clinic, babies were suspected of having developmental delays by screening using the KPSP (Pre-Development Screening Questionnaire) and 7 of 11 mothers who had babies did not know about the baby's growth and

development. Before examining the baby's motor development, first provide education to the baby's mother what gross motor development should have been done by the baby at the age of 3-6.

## Methods

The type of this research is Quasy-experiment (pre experimental designs). This research design uses two pretest-pottest groups, where in this design there is a comparison (control) group, but the first observation (pretest) has been carried out so that researchers may be able to test changes that occur after the experiment or posttest (Suryabrata, 2013).

## Results and Discussion

Table 1. Demographic Data of Baby Respondents Conducted by Baby Spa at Bunda Riani Martubung Medan Clinic in 2021

Demographic data	Frequency	Presentation (%)
1. Age		
3 Months	1	10
4 months	4	40
5 Months	3	30
6 Months	2	20
<b>Total</b>	10	100
Gender		
Man	4	40 %
Woman	6	60 %
<b>Total</b>	10	100 %

Based on table 1, it is known that of the 10 respondents studied aged 3-6 months, it is known that most of them are 4 months old, namely 4 (40%) while 5 months old are 3 (30%), while 6 month old babies are 2 (20%) and 1 (10%) people aged 3 months. As for the distribution of sex frequencies, it is known that most of them are female, as many as 6 (60%) while the baby is male as much as 4 (40%).

Table 2. Demographic Data of Baby Respondents Conducted by Baby Spa with Mozart Classical Music At Bunda Riani Martubung Medan Clinic in 2021

Demographic data	Frequency	Presentation (%)
1. Age		
3 Months	2	20
4 months	3	30
5 Months	3	30
6 Months	2	20
<b>Toll</b>	10	100
2. Gender		
Man	6	60
Woman	4	40
<b>Total</b>	10	100

Based on table 2, it is known that the demographic characteristics obtained from 10 respondents who were studied aged 3-6 months, it is known that most of them are 4 months old, namely 3 (30%) and 4 months old are 3 (30%), while infants aged 6 months as many as 2

(20%) and those aged 3 months as many as 2 (20%) people. As for the distribution of sex frequencies, it is known that the majority of them are male, namely 6 (60%) while the baby is male as much as 4 (40%).

### Univariate Analysis

The thing that is distributed is the development of the baby's gross motor before and after the baby spa at the Bunda Riani Martubung Medan Maternity clinic in 2021.

Table 3. Gross motor development of babies Before and after the implementation of Baby Spa at Bunda Riani Martubung Medan clinic in 2021

Category	Gross Motor Development			
	Before		After	
	F	%	F	%
Usual	7	70	8	80
Doubt	2	20	2	20
Deviation	1	10	0	0
<b>Total</b>	10	100	10	100

Based on Table 3, it can be seen that of the 10 respondents who were researched based on gross motor skills in infants before the baby spa was carried out there were 7 respondents (70%) normal development, 2 respondents (20%) doubtful development, 1 respondent (10%) development that experienced deviations. . While the motor development that has been carried out by the baby spa, there are 8 respondents (80%) normal development, 2 respondents (20%) doubtful development.

Table 4. Infant Gross Motor Development Before and After the Baby Spa Combination Method and Mozart Classical Music

Category	Gross Motor Development			
	Before		After	
	F	%	F	%
Usual	7	70 %	9	90%
Doubt	3	30%	1	10%
Deviation	0	0	0	0
<b>Total</b>	10	100%	0	100

Based on Table 4, it can be seen that of the 10 respondents who were studied based on the gauze motor in infants before the baby spa was carried out there were 7 respondents (70%) normal development, 3 respondents (30%) doubtful development, while the gross motor development that had been carried out by the baby spa was 9 respondents (90%) development was normal, 1 respondent (10%) development was doubtful.

### Bivariate Analysis

Table 5. Results of The Normality test of Gross Motor Development of Infants aged 3-6 Months in the Baby Spa Group at Bunda Riani Martubung Clinic in 2021

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistics	Df	Sig.	Statistics	Df	Sig.
Pre-test	.364	10	.000	.802	10	.016
Post-test	.302	10	.010	.781	10	.008

Based on Table 5, it can be seen that the Shapiro-Wilk value is the sig value for the pre-test which is 0.016 or  $p < 0.05$ ) and the value for the post-test is 0.008  $p < 0.05$ . Thus, the data is not normally distributed, which is the next step using the test. Non Parametric with Wilcoxon test.

Table 6. Results of The Normality of Gross Motor Development of Infants Aged 3-6 Months in The Combination Method Group Baby Spa And Mozart Classical Music at Bunda Riani Martubung Clinic in 2021

Tests of Normality						
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistics	Df	Sig.	Statistics	Df	Sig.
Pre-test	.342	10	.002	.841	10	.045
Post-test	.360	10	.001	.731	10	.002

Based on Table 4.5, it can be seen that the Shapiro-Wilk value is the sig value for the pre-test which is 0.045 or  $p < 0.05$ ) and the value for the post-test is 0.002  $p < 0.05$ . Thus the data is not normally distributed, which is the next step using the test. Non Parametric with Wilcoxon test.

Table 7. The Effect of Baby Spa on The Development of Gross Motor Babies Aged 3-6 Months In The Baby Spa Group at Bunda Riani Martubung Clinic Year 2021

Difference in Gross Motor Development Improvement				Sig. (2-tailed)
		Before	After	
Before and after the baby spa	Usual	7	8	
	Doubt	2	2	0,011
	Deviation	1	0	
	<b>Total</b>	10	10	

Based on Table 7, it can be seen that the comparison of babies before and after being given baby spa treatment, namely an increase in the normal category of 7 babies (70%) and an increase in the normal category of 8 babies (80%). The results of the Wilcoxon test showed an increase in the normal category, while in the deviation category there was a decrease in the value of sig. 0.011 and  $< 0.05$ , it is concluded that  $H_a$  is accepted and  $H_0$  is rejected, meaning that there is an effect of baby spa on the baby's gross motor skills.

Table 8. The Combination Of Baby Spa Method and Mozart Classical Music On Gross Motor Development of Infants Aged 3-6 Months In Bunda Riani Martubung Clinic 2021

Difference in Increase				Sig. (2-tailed)
		Before	After	
Before and after the baby spa	Usual	7	9	
	Doubt	3	1	0,005
	Deviation	0	0	
	<b>Total</b>	10	10	

Based on table 8, it can be seen that the comparison of babies with Mozart classical music before and after being given baby spa treatment, namely an increase in the normal category of 2 babies (20%). Wilcoxon test results showed an increase in the normal and doubtful categories with a sig value. 0.005 and  $< 0.05$ , it can be concluded that  $H_a$  is accepted and  $H_0$  is rejected, meaning that there is an effect of baby spa on the baby's gross motor development.

### **The Effect of Baby Spa on The Development of Gross Motor Babies Aged 3-6 Months At Bunda Riani Martubung Clinic in 2021**

Based on the results of the study, it was found that from 10 babies aged 3-6 months at the Bunda Riani Martbung clinic there was an effect according to the Wilcoxon test results  $p = 0.005$  ( $<0.05$ ), meaning that there was a significant effect between baby spa and motor development. rough baby aged 3-6 months. This is in line with Budi's research (2018) on the topic of baby spas with baby's gross motor skills showing that baby spas are more proven that motor control abilities will develop more rapidly than if they play on the floor, because when swimming in water, the effect of gravity is very low so that it allows the baby to move. more and all muscles will work optimally. the baby expends more energy when swimming for 15 minutes with warm water media so that the baby expends more energy in the body. After the baby does the baby spa treatment so that the baby experiences an increase in motor development, both gross and fine (Unggul et al., 2018).

This study is in accordance with the research conducted by Febry et al (2021) on the topic of Baby Spa Affecting the Motor Development of Infants Age 3-6 Months. It concluded that there were most of the babies in the experimental group before doing the baby spa, there were 10 babies with dubious development categories after doing the baby spa into 2 baby. There is an effect of baby spa on baby's motor development at the age of 3-6 months. There were most of the babies in the experimental group before doing the baby spa, there were 10 babies with dubious development categories after doing the baby spa to 2 babies. There is an effect of baby spa on baby's motor development at 3-6 months of age (Dahlan et al., 2021).

One of the most important child developments to monitor during this period is motor development because much of cognitive performance is rooted in successful motor development. The combination of positive mother-child interaction, physical exercise and early stimulation will improve children's motor development (Hati & Lestari, 2016). One of the tactile stimulation that can be given is baby spa for babies, because with this baby spa it can stimulate the muscles, bones and organic systems to function optimally.

Stimulation of brain tissue is very important during a child's golden period. The more stimulation you give to your child, the brain tissue will develop up to 80% by the age of 3-5 years. On the other hand, if the child is never given sufficient stimulation, the brain tissue will shrink so that brain function will decrease. This is what causes the development of children to be hampered. Lack of stimulation in children can affect the development of brain intelligence, developmental deviations, even permanent developmental disorders (Uce, 2018).

### **The Influence of The Combination of Baby Spa Method and Mozart Classical Music on The Development of Gross Motor of Babies**

Based on the results of the study, it was found that from 10 babies aged 3-6 months at the Bunda Riani Martbung clinic there was an effect according to the results of the Wilcoxon test  $p = 0.005$  ( $<0.05$ ), meaning that there was a significant effect between baby spa and development. gross motor skills of infants aged 3-6 months. In line with Quriesa's research with the topic of baby spa research with baby development, the results showed that babies who did baby spas in the routine category were 44% and 55.9% did not routinely do baby spas. The development of babies who did baby spa experienced normal development by 64.7% and experienced suspect development of 35.3%. Chi square analysis obtained  $p$  value = 0.043 (0.05



which means that there is a relationship between the frequency of baby spas and the development of babies aged 4-6 months (Dewi & Trisnasari, 2015).

In line with Sri's research (2020) with the research topic "Baby Spa and Music Therapy on Baby Growth and Development" with the results of this research being conducted to determine baby development through baby spa and music therapy and useful as a follow-up to maximize baby development. analysis using a multivariate approach shows a significant growth in the development of KPSP (Handayani & Mallongi, 2020).

One of the factors that affect growth is baby stimulation including visual stimulation, auditory stimulation, tactile or tactile stimulation and visual coordination with movement. Music experts and educators have conducted research to see the positive effects of several types of music, many facts revealed from these researchers. Among them there is an interesting relationship between music and human intelligence. Classical music, for example the works of Mozart, has a good stimulating effect on babies. But from other studies revealed that in fact it is not only Mozart's music that can be used. all the music with calm rhythms and softly playing has a good effect on fetuses, babies, and children (Marhamah et al., 2016). Of the many works of classical music, actually the composition of Wolfgang Amadeus Mozart (1756-1791) is the most recommended. Several studies have proven that his music has the most positive effect on the development of fetuses, infants and children. The research was conducted by Dr. Alfred Tomatis and Don Campbell. They call it the "Mozart effect" (Amalia, 2013).

### **Difference in Influence of Baby Spa Method Combination and Mozart Classical Music Affects Gross Motor Development**

Based on the results of the Wilcoxon test, the p value for the baby spa was 0.011 and the p value was 0.005. It can be seen that the p-value  $< (0.005)$ . This shows that there is a significant difference in gross motor development after being given baby spa and Mozart classical music to infants aged 3-6 months at the Bunda Riani Martubung clinic, Medan, which means that the combination of Baby spa and Mozart classical music is the variable that has the most dominant effect on motor development. rough baby aged 3-6 months.

### **Conclusion**

From the measurement results of 10 babies before receiving baby spa treatment, 1 baby was included in the deviation category, 7 babies were in the normal category and 2 babies were in the doubtful category. After receiving baby spa treatment, there was an increase from 1 baby in the deviation category to normal and 2 others in the doubtful category. From the measurement results of 10 babies before receiving baby spa treatment with Mozart classical music, 3 babies were included in the doubtful category, 7 babies were in the normal category. After receiving baby spa treatment with Mozart classical music, there was an increase from 2 babies in the doubtful category to normal. There is an effect of baby spa on gross motor development of babies aged 3-6 months at the Riani Martubung clinic in 2021 with p value =  $0.011 < 0.05$ . There is an effect of Baby spa with a combination of Mozart classical music on the baby's gross motor development at the Riani Martubung clinic in 2021 with p value =  $0.005 < 0.05$ . There is a significant difference between baby spa and Mozart classical music combination method on gross motor development of infants aged 3-6 months with baby spa results sig  $0.011 > 0.005$  combination of baby spa method and Mozar classical music so that it can be concluded that the most dominant variable in improving gross motor skills for babies aged 3-6 months is the baby's spa method.

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