

# Effectiveness of Baby Spa and Music Therapy on Growth and Development of Baby

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## Abstract

Providing a stimulus given shortly after the baby is born gives a very important effect for the development of children. In the development of a child, stimulation is a basic need and also plays an important role to develop. Dewanti,<sup>1</sup> revealed that baby spa is one form of nonverbal communication that can be done by the mother. This spa treatment is very beneficial for baby's health and development. Infants who have been treated with the spa will look fresh, healthy, vibrant and growth and development faster than infants who never did at all spa.

In addition to the baby spa, music therapy is also one therapy that can stimulate thinking, improve concentration and memory, and can improve the cognitive development of infants and children. Music therapy is an effort to improve physical and mental quality with sound stimuli consisting of melodies, rhythms, harmony, timbre, shapes and styles that are organized in such a way as to create useful music for mental and mental health<sup>2</sup>.

This study was conducted to determine the development of infants through baby spa and music therapy, and useful as a follow-up to improve the growth and development of the baby so that the maximum. The population in this study is 6-12 months old baby with sampling using quota sampling technique with a sample of 60 babies. Quantitative quasi-experimental research method with the only posttest with control group design approach, where in the case group was given continuous intervention for 16 days while in the control group only 1 interval was given at the beginning of the meeting, at the end of the study the two groups will be measured the level and compared the results, with the General Linear Model Repeated Measures (GLM RM) test.

The result showed that the average of the first measurement scores in the lower case group was slightly lower than the control group that was 8.97 (SD = 0.928), while the mean score on the second measurement and the third measurement in the case group was higher than the control group 9.53 (SD = 0.776) and 9.80 (SD = 0.484). The result of the analysis with multivariate approach showed significant difference KPSP score for growth and development on the third level of measurement (p-value <0,007). Multivariate analysis can explain the variation of growth and development variable amount of 16,1%, there was a significant effect difference between case group and control group in improving growth and development score (p-value <0.000) amount of 44.7%.

**Keywords:** *Baby spa, music therapy, the growth and development of the baby.*

## Introduction

Babies born already have a number of innate reflexes and an urge to explore the surrounding environment. Reflex occurs when the baby receives a stimulus or stimulation, because the baby is very sensitive to the

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environment and the stimulus given. Touch is one type of stimulation. This was stated by Widyastuti and Widyani (2008) where types of stimulation can be visual, auditory, kinetic and touch stimulation. Touch stimulation that has been given by the community to their children is by touch and massage<sup>3</sup>.

Aspects of growth and development in children, today is one aspect that is taken seriously by experts, because it is an aspect that is very influential in the process of forming a person in the future to adulthood both physically and psychosocially<sup>2</sup>. In the development of a child, stimulation is a basic need and also plays an important role to be able to develop optimally. At the age of 1-3 months the baby also needs cuddles, touches and cradles of his parents, especially the mother<sup>4</sup>.

Dewanti<sup>5</sup> revealed that the baby spa is one form of non-verbal communication that can be done by the mother. This spa treatment is very beneficial for baby's health and development. Infants who have been treated with spas will look fresh, healthy, vibrant and their growth and development are faster than babies who have never done a spa at all. According to Hammer and Turner in Soedjatmiko, baby spas are one tactile stimulation in infants that is a kind of sensory stimulation that is important for optimal infant development. These tactile stimuli can take the form of massaging or swimming. Nowadays, experts have been able to prove naturally about what is long known to man, namely touch therapy and massage in infants have many benefits to the physiological changes of the baby let alone carried out by the baby's mother. The mother is the person closest to the baby, where the mother's massage to her baby is a gentle sweep of the bonding of affection. Mother's skin is the earliest skin known to babies<sup>1</sup>. The results of research conducted by Suharto, there is an effect of baby stimulation in the form of massage, gymnastics and games on gross motor development of 3-8 months old infants, followed by research conducted by Dewi, et al, showing that babies who routinely do the majority of baby spas experiencing normal development, namely 86.7%<sup>6</sup>.

Several studies have proven that music has a strong influence on human life. Experts argue that music affects human intelligence, physical, mental and emotional health. Such research was carried out by Dr. Alferd Tomatis and Don Campbell. They termed the "Mozart effect". Compared to other classical music compositions, melodies and high frequencies in Mozart's works are able to stimulate and empower creative and motivational areas in the brain<sup>7</sup>.

## Materials and Method

The research design used a quasi-experiment with pre-posttest with control group design, where in the case group were given interventions continuously for 3 months, whereas in the control group only given intervention 1 (one) time at the beginning of the meeting, during the study the two groups would be measured the rate of growth and development every month for 3 times during posyandu visits and compared the results. The population and sample in the study were all 6-12 months old babies at Pondok Benda health center and Benda Baru health center in South Tangerang using a minimum sample of 30 respondents in the intervention group and 30 respondents in the control group in a total sample of 60 respondents. The analysis was carried out by testing the General Linear Model Repeated Measures (GLM RM).

## Results

Table 1 shows that the average age of respondents in both groups in the case group was 29.6 months and the control group was 29.2 months. The highest average parity group in the case group and control group was 2 people. The sex of the respondents with the largest proportion were men in both groups. The largest proportion of respondents' level of education is tertiary education, namely high school and PT in both groups and the largest proportion of maternal employment status does not work in both groups. Based on the history of exclusive breastfeeding the proportion of the majority said giving exclusive breastfeeding to the baby both in the intervention group and in the control group.

**Table 1. Description of characteristics respondents**

Variable	Intervention group						Control Group					
	mean	min	max	SD	SE	n	mean	min	max	SD	SE	n
Age of mother (years)	29.6	20	41	5.94	0.63	30	29.2	20	41	6.37	0.83	30
Parity	2	1	5	1.26	0.13	30	2	1	5	1.32	0.17	30
Variable	Intervention Group						Control Group					
	f	Percentage		n		F	Percentage		n			
Sex of baby:												
Girl	12	40.0		30		13	43.3		30			
Boy	18	60.0		30		17	56.7		30			
Qualification of mother:												
Low	1	1.1		30		4	13.3		30			
High	29	98.9		30		26	86.7		30			
Mother's work:												
Yes	6	20.0		30		3	10.0		30			
No	24	80.0		30		27	90.0		30			
Eksklusive breastfeeding:												
No	9	30.0		30		10	33.3		30			
Yes	21	70.0		30		20	66.7		30			

Table 2 shows the average value of growth and development of infants experiencing an increase in measurements I, II and III in the intervention group and tended to decrease in the control group. Statistical test results showed no differences in growth and development of infants between the intervention group and the control

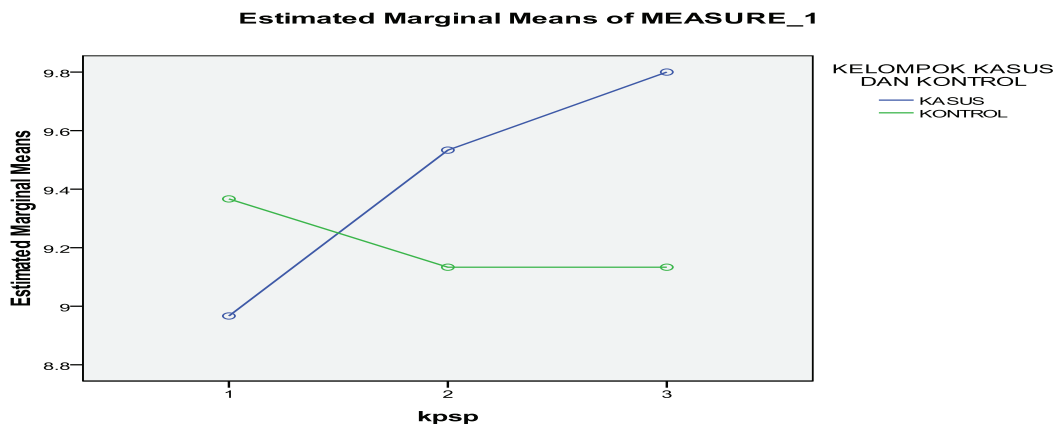
group at measurement I after 1 month of treatment (p value = 0.080), but there were differences in growth and development of infants in measurement II after 2 months of treatment ( p value = 0.044), and there are differences in growth and development of infants at measurement III after 3 months of of treatment (p value = 0.001).

**Table 2 Growth and Development of Babies in Measurements I, II and III**

**In the intervention group and control group**

Variable	Intervention Group (n=30)		Control Group(n=30)		P value
	Mean	95% CI	Mean	95% CI	
Growth and development of babies:					
measurements I (after 1 month)	8,97	-0,850-0,050	9,37	-0,850-0,050	0,080
measurements II (after 2 months)	9,53	0,011-0,789	9,13	0,011-0,789	0,044
measurements III (after 3 months)	9,80	0,377-0,957	9,13	0,377-0,957	0,001

The average of the first measurement scores in the intervention group was lower than the control group, which was 8.97 (SD = 0.928), while the average score in the second measurement and the third measurement in the intervention group was higher than the control group, which was 9.53 (SD = 0.776) and 9.80 (SD = 0.484). This can also be seen in the plot analysis as below:



**Figure 1. Graph of interaction between measurement time and group on growth and development with KPSP form**

In general, the interaction analysis contained differences in growth and development between measurements (at month 1 and month 2 and month 3) between the intervention group and the control group (p value <0.001) with a power difference of 32.3%. The results of the analysis with the GLM-RM analysis approach showed that there was a significant difference in the score of KPSP for growth and development at the three measurement levels (p-value = 0.007), with a power of difference of 16.1%. Interaction analysis between the intervention group and the control group

showed a significant difference in the effect of increasing growth and development scores (p-value = 0,000), with a strength of difference of 44.7%.

### Discussion

The results showed that the age of respondents in the two groups on average in the case group was 29.6 months and the control group was 29.2 months. The highest average parity group in the case group and control group was 2 people. The sex of the respondents with the

largest proportion were men in both groups. The largest proportion of respondents' level of education is tertiary education, namely high school and PT in both groups and the largest proportion of maternal employment status does not work in both groups. Based on the history of exclusive breastfeeding the proportion of the majority said giving exclusive breastfeeding to the baby both in the intervention group and in the control group. Based on the results of the study we can see that the characteristics of respondents in the intervention group and control group mostly have similarities.

Growth and development of infants during the intervention showed that the average value of growth and development of infants experienced an increase in measurements I, II and III in the intervention group and tended to decrease in the control group. There are differences in growth and development of infants in measurement II after 2 months of treatment ( $p$  value = 0.044), and there are differences in growth and development of infants at measurement III after 3 months of treatment ( $p$  value = 0.001).

In general, the interaction analysis contained differences in growth and development between measurements (at month 1 and month 2 and month 3) between the intervention group and the control group ( $p$  value <0.001) with a power difference of 32.3%, there was a significant difference in the score of KPSP for growth and development at all three levels of measurement ( $p$ -value = 0.007), with a strength of difference of 16.1%. Interaction analysis between the intervention group and the control group showed a significant difference in the effect of increasing growth and development scores ( $p$ -value = 0,000), with a strength of difference of 44.7%.

Based on the results above shows that the combination of baby spa and music therapy has an impact or influence on the growth and development of the baby. The combination of these two treatments produced a significant effect on the growth and development of the baby. Esti (2016) mentions in his research, Solus Per Aqua is a body treatment using water media. Babies or children who have been treated with a spa will look fresher, healthier, more vibrant<sup>8</sup>.

According to Minister of Health Regulation No.1205 / Menkes / X / 2004, Solus Per Aqua is a

traditional effort that uses a holistic approach, through comprehensive treatment using a combination of hydrotherapy (water therapy) and massage (massage) methods that are carried out in an integrated manner to balance the body, mind and feelings. The baby spa itself is having 2 treatments namely massage and also hydrotherapy. Which is where one of the treatments has a function as a medium that can stimulate the baby's motor movements. By playing water, the baby's muscles will develop very well, the joints grow optimally, body growth increases and the body becomes supple. The baby's motor skills will develop more rapidly than if he only plays on the floor, because when swimming in the water, the effects of gravity are very low. According to a study from the University of Science and Technology in Norway, babies who can swim have a better balance, and are able to reach objects around them more easily than babies who are not swimmers<sup>9</sup>.

Based on the results above shows that the combination of baby spa and music therapy has an impact or influence on the growth and development of the baby. The combination of these two treatments produced a significant effect on the growth and development of the baby. Esti mentions in his research, Solus Per Aqua is a body treatment using water media. Babies or children who have been treated with a spa will look fresher, healthier, more vibrant. According to Minister of Health Regulation No.1205 / Menkes / X / 2004, Solus Per Aqua is a traditional effort that uses a holistic approach, through comprehensive treatment using a combination of hydrotherapy (water therapy) and massage (massage) methods that are carried out in an integrated manner to balance the body, mind and feelings. The baby spa itself is having 2 treatments namely massage and also hydrotherapy.

Regular massage can improve child growth and development. Research conducted by Schanberg in 1989 cited by Setyaningsih shows that touch, tactile or massage affect the production of enzyme ODC (ornithin decarboxylase), an enzyme that is a sensitive indicator of cell growth and tissue development, release of growth and development hormones<sup>3</sup>.

In addition to baby massage and water therapy, another action combined in this study is music therapy. Baby music therapy can be an alternative to educate the

child's brain since he was still in the womb. Baby music therapy is indeed proven to affect baby growth later on. Children who have been playing music in the womb have higher intelligence, are easier in mathematics, have a stronger personality and more easily absorb many things that occur in their environment. This is because music for babies can balance the development of the right and left brain. Not only that, psychologically baby music therapy can bring the emotional connection between mother and child closer. Baby music therapy also affects the condition of the mother. Mothers can experience relaxation and calm themselves from activities when listening to music. This is certainly very good because mothers who are psychologically calm and furthest from stress will have a good impact on the child<sup>10-12</sup>.

### Conclusion

The results obtained were significant differences between the measurements of resistance I, II, and II in infants carried out a combination of Baby Spa and music therapy. Based on the results of the study found a significant difference between stage I, II and II measurements between babies carried out combination of Baby Spa and therapy music with babies that is not done. The growth and Campbell, Donald (2002). *Efek Mozart Untuk Anak-Anak*, Jakarta :PT.Gramedia Pustaka Utama. of infants in the group of infants who carried out the baby spa and music therapy regularly were higher than the group of babies that were not performed<sup>8</sup>.

**Ethical Clearance-** Taken from University ethical committee.

**Source of Funding-** Self

**Conflict of Interest-** Nil

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