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# The Effect of Baby Gym Complementary Therapy on Motor Skills in **Improving Baby Development**

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### **Article Info**

#### Abstract

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Background: Globally, around 20-40% of infants aged 0-2 years experience problems with delays in the development process. The period from infancy to age 2 years is called the 1000 days of birth. This period is the shortest of all developmental periods, so it is essential to meet optimal nutrition and stimulus because, after this period is passed, the brain will grow slowly and can never grow quickly again. Baby massages can help children get the appropriate stimulation for infant development. Baby massage is one of the traditions inherited from our ancestors, and it has proven its efficacy in stimulating development. Along with technological development, baby massage has been modified to a more modern pattern until it became a new trend known as the baby gym. This study aims to determine the effectiveness of complementary baby gym therapy on motor skills in improving development. The research method used is quantitative research with a quasy experiment design with pre-test and post-test control group design. The sample in this study were toddlers aged 5-12 months. The sample size was 60 toddlers, 30 in the experimental and 30 in the control group. The sampling technique was purposive sampling. Results: After complementary baby gym therapy was carried out on babies, the baby's motor development was normal for 86.67% of respondents. The t-test results showed p = 0.012 (<0.05), meaning that there is a significant influence between the baby gym and the development of motor babies. Conclusion: Complementary therapy in the baby gym has an effect on motor skills and on improving development.

### **INTRODUCTION**

According to the World Health Organization (WHO) (2017), around 20-40% of babies aged 0-2 years experience problems with delays in the development process. The period from infancy to 2 years is called the 1000 days of birth. This period is the shortest of all developmental periods, so it is essential to meet optimal nutrition and stimulation because, after this period passes, the brain will grow slowly and can never grow quickly again (Bhandari, 2021).

Infancy is a golden age often referred to as a critical period for development. Achieving optimal development results from interacting with various interrelated factors, namely genetic factors, behavior and environment, and beneficial stimuli. Growth is a physical change and increase in the size of individual body parts that are each different. At the same time, development is an increase in fine and gross motor skills, speech and language, socialization, and independence; everyone must adapt to their environment. The growth and development of infants is a golden period, which is also a critical period in a person's development in early life at 0-12 months. Motor development disorders cause delayed development due to many things, including muscle tone disorders and lack of infant stimulation. In Indonesia, 5-10% of children are estimated to experience developmental delays (Novita et al., 2023).

According to the Regulation of the Minister of Health of the Republic of Indonesia No. 6 of 2024, in order for children's growth and development to be optimal, supportive conditions are needed, including relationships between family members and the family environment that provide affection, healthy physical, mental and social conditions, accessible to health services, sufficient food and balanced nutrition, children get the opportunity to get stimulation for growth and development and early education in the family and community, children have the opportunity to do activities and play games that stimulate development. Along with technology development, baby massage was modified to a more modern pattern until it became a new trend known as the complementary therapy service Baby Gym.

Complementary health services (PKK) are health services that use non-conventional medicine. PKK can be done together with conventional medicine, one of which uses touch therapy or stimulation. Stimulation is an important period in growth and development. The mother's touch is responded to by the baby as a form of comfort and expression of affection (Zahra et al., 2022). The baby gym is an effective stimulation for babies. Baby gymnastics, or baby gym, is a collection of movement games that aim to optimally stimulate babies' growth, development, and motor skills. Baby gym is usually done when the baby is 3-12 months old (Adrian, 2024). Doing baby gym can detect early delays in the baby's development, especially gross motor development. Baby gym stimulation therapy is generally carried out by therapists who have undergone training and are certified, but the baby's mother can do it with the guidance of a therapist (Ningrum et al., 2022). The phenomenon in society today is that many parents still do not understand the importance of complementary Baby Gym therapy.

### **METHOD**

The quantitative research method uses a Quasy Experiment design with a pre-test and post-test control group design. This research was conducted in Pugeran Maguwoharjo Hamlet, Depok, Sleman, Yogyakarta, with a sample of toddlers aged 5-12 months in Pugeran Hamlet, a total of 30 respondents. The sampling technique was purposive sampling.

The instruments used in this study were a questionnaire sheet and a KPSP (Pre-Developmental Screening Questionnaire). KPSP (Pre-Developmental Screening Questionnaire) is an early detection instrument in the development of children aged 0-6 years. This KPSP helps determine whether the child's development is normal or there are deviations. In the KPSP assessment procedure, the examiner asks the mother or caregiver questions about the questions on the KPSP form according to the toddler's age group. There are 10 questions in the KPSP instrument with the answers "YES" or "NO". The independent variable in this study is a baby gym, while the dependent variable is motoric. Data analysis was carried out using univariate and bivariate analysis.

# **RESULTS AND DISCUSSIONS**

Variabel	f	%	
Age			
5-8 months	17	56,67	
9-12 months	13	43,33	
Sex			
Воу	12	40	
Girls	18	60	
Baby Gym			
Routine	9	30	
Not routine	21	70	
Motor skills			
Normal	18	60	
Abnormal	12	40	
Total	30	100.0	

#### **Table 1. Respondent characteristics**

	Motor skills				
Category	Before		After		
	f	%	f	%	
Normal	18	60	26	86,67	
Tidak normal	12	40	4	13,33	
Total	30	100	30	100	

### Table 2. Infant Motor Development before and after Baby Gym Complementary Therapy

### Table 3. Analysis of the influence of baby gym on infant motor development

Motorik	Baby Gym Complementary Therapy				
	Before		After		p-value
	f	%	f	%	
Normal	18	60	26	86,67	
Abnormal	12	40	4	13,33	0,012
Total	30	100	30	100	

Based on the data in Table 1 above, it can be explained that the majority of respondents are 5-8 months old (56.67%) and female gender (60%). Most babies do not routinely go to the baby gym (70%), and the baby's motor skills are not normal (56.67%).

Based on the data in Table 2, 40% of respondents' babies' motor skills were not normal before complementary baby gym therapy, and 60% of respondents had normal motor skills. After complementary baby gym therapy was carried out on babies, 86.67% of respondents' babies' motor skills were normal, and those who were not normal were 13.33%.

Based on table 3 shows that before being given complementary baby gym therapy, motor development was normal for 60% of respondents; after being given complementary baby gym, motor development of babies was normal for 86.67% of respondents. Thus, the provision of baby gym therapy has a significant effect on increasing motor development (p-value 0.012).

Based on the measurement results, it can be explained that the babies' motor skills were not normal before complementary baby gym therapy was carried out by 40%, and 60% of respondents had normal motor skills. After complementary baby gym therapy was carried out on babies, babies' motor skills were normal by 86.67% of respondents, and those who were not normal were 13.33%. In a child's development, stimulation is a basic need. Stimulation plays an important role in maximizing the growth and development of the baby. Stimulation that is easily given by parents actively to the baby can be through tactile stimulation, moving the baby's legs and hands in the extension and flexion positions (Soedjatmiko, 2006). Several studies on baby gymnastics provide report results related to its benefits such as research related to baby gymnastics, including research by Jin Jing et al. (2007), which found that in babies who were given movement training treatment, growth, and development were faster compared to babies who were not given movement training. The results of another study conducted by Sari (2023)) showed that healthy babies born full-term who received baby gymnastics treatment had more significant mental motor development compared to those who were not given treatment. Meanwhile, research conducted by Merineherta (2011) showed that baby gymnastics increased developmental delays in babies aged 3-6 months, and there was a significant difference in the increase.

Baby spa therapy consists of a baby gym (10 minutes) for 1 month with a frequency of 2 times in one Sunday, so the results measurement was obtained; 26 babies were in the normal category, and four babies were in the abnormal category. Based on the research results, it is known that the t-test results show p=0.012 (p<0.05), meaning that there is a significant influence between the baby gym and the development of motor babies.

After receiving complementary therapy treatment at a baby gym for approximately 10 minutes, Kusyarini's research (2019) results show that babies aged three months and over who are given a gymnastics program will have faster motor development without any medical indications showing promising results. Babies become more confident and active, have better socialization, and walk faster

than children of the same age. These results align with the theory put forward by Soetiiningsih (2020) that health care, providing regular stimulation, and weighing regularly will support children's growth and development. Acceleration of motor development also involves the growth of muscles and bones, accompanied by various movements such as teaching gymnastics. The baby gym provides stimulation and facilitation for the development phase according to age and ability, optimizing gross motor skills, improving coordination, concentration, and balance of body movements, and increasing the baby's physical strength. By providing baby gym, babies get simultaneous proprioceptive input, stimulating muscle spindles, which are then carried to the cerebral cortex, which orders the agonist and antagonist muscles to contract to increase motor coordination. In addition, repeated movements will provide experience to the muscles, which are then conveyed to the brain so that the brain receives and stores muscle movement memory and motor development. Previous research by Sugi Purwanti, 2004, stated that babies who do baby gymnastics will experience good motor development. This is because babies get routine and appropriate stimulation with gentle touches and movements that can increase the baby's intelligence in a complex way. Baby gyms can also strengthen muscles and joints, improve coordination and balance, smooth blood flow, and allow babies to explore their bodies. According to Barbara Zukunft, 1999, a baby gym can stimulate digestive function, help increase body weight, and stimulate motor movements.

# **CONCLUSIONS AND RECOMMENDATIONS**

# **Conclusion:**

The description of the characteristics of the respondents was obtained from babies who did not routinely undergo complementary baby gym therapy, and some of their motor development was abnormal. The results of the bivariate analysis show that providing baby gym therapy has a significant effect on improving motor development (p-value) 0.012).

## **Recommendation:**

It is recommended that health workers in the work area develop promotions and education about baby gyms for the public, specifically for the baby, to increase the development of motor skills, both gross and fine. This can be done by providing counseling accompanied by a demonstration of distributing leaflets, which can be done through integrated health posts by officer health. Future researchers are expected to research other aspects that can improve infant development.

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