Journal RESPECS (Research Physical Education and Sport)
Volume 5, Number 1, 2023, pp. 38-43
DOI: https://doi.org/10.31949/respecs.v5i1.3314
p-ISSN: 2654-5233
e-ISSN: 2654-7112

Baby Gym Practice to Improve Motor Development among Babies in the Banjar Batannyuh at Ages 6 to 9 Months

Ni Nyoman Diah Prameswari[1A-E], Indah Pramita[2D]*, Antonius Tri Wahyudi[2C]
[13] Physiotherapy Study Program, Faculty of Health Science And Technology, Dhyana Pura University, Badung, Bali, Indonesia, 80361
[2] Physiotherapy Department, Faculty of Medicine, Udayana University, Denpasar, Bali, Indonesia, 80234
*Coresponding Author: indahpramita@unud.ac.id

Authors' contribution: A) Conception and design of the study; B) Acquisition of data; C) Analysis and interpretation of data; D) Manuscript preparation; E) Obtaining funding

ABSTRACT
Every child must accomplish the child development and growth process; else, future growth and development will be delayed. Delays in children are caused by a lack of stimulation, thus stimulation may be provided in the form of baby gym to improve children's growth and development. This research aims to determine whether giving a baby gym may improve motor development in babies aged 6 to 9 months in the Banjar Batannyuh area. This study used a pre-experimental one-group pre and post-test method. This study's sample consisted of 7 babies aged 6-9 months who fulfilled the inclusion and exclusion criteria. Measurement of motor development employing KPSP. The recommended activity, baby gym, is performed three times each week for four weeks. The average pre-test score before exercise was 7.71, while the average after exercise was 9.14 after testing using paired sample t-test. With a p-value of 0.001, the increase obtained after training was 18.5%. The study's findings suggest that giving a baby gym to babies between the ages of 6 and 9 months living in Banjar Batannyuh area can improve their motor development.

ARTICLE HISTORY
Received: September 8, 2022
Accepted: December 28, 2022
Publish: January 12, 2023

KEYWORDS
Baby Gym;
Motor Development;
Babies

How to Cite : Prameswari, N.N.D., Pramita, I., & Wahyudi, A.T. (2023). Baby Gym Practice to Improve Motor Development among Babies in the Banjar Batannyuh at Ages 6 to 9 Months. *Journal RESPECS (Research Physical Education and Sport*, 5(1),38-43. https://doi.org/10.31949/respecs.v5i1.3314

INTRODUCTION

As the nation's future leaders, children have a right to a healthy start in life and the process of their growth and development is one that must be taken seriously from an early age. Growth is defined as a growth in physical size and cell structure, or a change in some size or value, such as an increase in an individual's length, height and weight (Awal, 2018). Development is the capacity to improve an organism's structure and behavior such that it becomes more complex and structured (Soetjiningsih & Ranuh, 2013). Motor

development is divided into two subcategories: gross motor development and fine motor development. Although the phases of motor development are similar, the outcomes differ from one person to another. Optimizing children's motor development needs the assistance and stimulation of others, particularly parents. Every child must complete each motor development stage since each stage of development improves the one after it (Mahmud, 2019). The possibility of deviations or delays in the child's later growth and development process exists if the phases of child development are not passed. As a result, early discovery of issues or deviations in child development is important since late detection results in treatment delays (Syahailatua & Kartini, 2020; Wati, 2016)

Baby gym is one activity to stimulate babies. The purpose of the baby gym is to optimize motor development in early childhood. Baby gym is a sort of physical training with particular qualities and guidelines in which the movements are constantly structured and organized to reach certain goals (Zaidah, 2020). Baby gym helpful numerous aspects of a baby's growth and development, including learning to coordinate and strengthening muscles and joints in preparation for standing, sitting and walking (Aminati, 2013; Setiawan, 2019). Additionally, the baby gym improves blood circulation, heart health, balance, and attentiveness, as well as hearing, eyesight and the baby's growth and development. The purpose of this study is to determine whether giving a baby gym can improve motor development in babies aged 6-9 months.

MATERIALS AND METHODS

This study employed a pre-experimental design with a single group pre and post-test. This approach employs a single group of people to collect data before and after treatment. It is possible to determine the treatment's effectiveness by comparing the before and after treatment conditions (Sugiyono, 2019). The research was conducted in the Banjar Batannyuh area, West Denpasar District, Denpasar City, by visiting babies at their separate houses one by one. This research included all newborns aged 6-9 months in the Banjar Batannyuh area, a total of 15 babies. The samples were selected based on the study's inclusion criteria, which were babies aged 6-9 months, male and female, with parental/guardian approval to be the research sample. Babies aged 6-9 months who had congenital diseases, diarrhea, fever, seizures, or other conditions that doctors advised them not to perform much exercise were excluded from this research. A sample of seven participants was chosen based on these criteria. Motor development is assessed using the Development Pre-Screening Questionnaire (KPSP). A descriptive analysis was performed on children's motor development. The Shapiro-Wilk test was used to determine normality in this research, while the Paired Sample T-Test was used to determine the hypothesis.

RESULTS AND DISCUSSION

The results are shown as a frequency distribution table, descriptive analysis, normality test, and hypothesis testing. The findings of the study are as follows:

Table 1. Characteristics of the sample by age and sex

Characteristic	Total (n)	Percentage (%)
Age		
7 months	1	14,3
8 months	2	28,6
9 months	4	57,1
Sex		
Male	3	42,9
Female	4	57,1

Based on the sample characteristic data in table 1, it is noted that the sample with the age group of 7 months has 1 baby (14.3%), the group with the age group of 8 months has 2 babies (28.6%), and the group with the age group of 9 months has 4 babies (57.1%). The data collected from 7 samples are divided into three samples of males and four samples of females.

Table 2. Descriptive Statistical Analysis

Descriptive Data	N	Min	Max	Mean	Std. Deviation	Percentage Increase
Pre-test	7	7	9	7,71	0,756	18,5%
Post-test	7	8	10	9,14	0,690	

According to the descriptive statistical analysis of the pre-test in table 2, the average value (mean) is 7.71, with a standard deviation of 0.756 ranging from 7 to 9. The post-test descriptive statistical analysis showed an average (mean) value of 9.14, with the lowest (minimum) 8 and highest (maximum) 10 standard deviations of 0.690.

Table 3. Normality test

KPSP	Shapiro-Wilk		Description
	N	Sig.	
Pre-test	7	.086	Normal Distribution
Post-test	7	.099	Normal Distribution

The normality test in this study employed the Shapiro-Wilk test, with a significant value of 0.086 for the pre-test, showing that the data were normally distributed, and 0.099 for the post-test, indicating that the data were normally distributed. The data is considered normally distributed if the significance value is higher than 0.05 ($p>0.05$).

Table 4. Hypothesis testing

Paired-Sample T-Test					
KPSP	Mean	Std. Deviation	t	Df	Sig.
Pre-test	7.71	.756	-7.071	6	.001
Post-test	9.14	.690			

Due to the normal distribution of the normality test results, the Paired Sample T-Test was utilized as the hypothesis test in this study. Table 4 shows that the paired sample t-test results had a significant value of 0.001, indicating a significant difference between the pre-test and post-test. This supports the researcher's hypothesis that there is an improvement in motor development among babies aged 6-9 months in the Banjar Batannyuh area.

In this study, 7 babies in the Banjar Batannyuh area between the ages of 6 to 9 months were selected as a sample. The researchers selected 6-9 months as the age for this study since infancy is a golden era and an essential stage of child development during which children are particularly sensitive to their surroundings, and since this period is transitory and unable to repeat (Bangun, 2021; Iswati & Rosyida, 2020). Children can easily get stimulation of information and abilities that correspond to the phases of child development at this time (Sinaga et al., 2021). The appropriate kind of stimulus will help the child's brain grow, allowing their talents to develop at the best rate for their age (Indrayani, 2020). In this study, there were three male babies (42.9%) and four female infants (57.1%). According to Misniarti (2022), boys are more energetic and daring than girls, and their parenting techniques will be more independent. When the research was done, male babies were easier to lead than female babies when given the baby gym, thus when the male babies were tested using KPSP, they had higher KPSP scores than the female babies.

Based on the data obtained, measurements were done using KPSP, and the findings revealed that 6 samples of babies aged 7, 8, and 9 were included in the questionable group, while 1 sample of babies aged 8 months was included in the appropriate category. According to Mustaghfiroh & Risnawati (2018) each child's growth is unique and their rates of development vary. Intrinsic and external variables both impact child development. Growth and development problems occur when hereditary and environmental factors fail to satisfy the basic demands of a child's growth and development (Yulianti et al., 2018). The role of parents in teaching children is necessary to help children grow and develop more optimally (Idhayanti et al., 2019). As a result, parents are educated on how to encourage a child's growth under their age in babies with unusual KPSP levels, such as through instruction on the baby gym used in this study (Ulfa, 2018).

The baby gym was used 12x in this study, with a frequency of 3x per week for four weeks. This is consistent with the research done by Febriyanti (2020) following the baby gym on babies aged 6 months as many as 12 treatments said that the participant's development increased after being provided a baby gym, which was by the baby's age. According to Zaidah (2020) giving a baby gym to babies for one month improved their gross motor function. Mildiana (2019) research on babies aged 6 months after getting a baby gym for 30 days revealed that the baby gym was 11x more effective in improving the ability to lift the baby's chest with both hands as a support and 10x more effective in improving the ability to lift the neck when the second arm was pulled into a sitting position. The movement is identical to the movements performed in this study, specifically movements 3a and 1b. In line with the research of Patimah et al., (2021), the baby gym

has effects on the development of infants aged 6-9 months at Panglayungan Health Center Tasikmalaya with development according to their age.

Baby gyms are one type of stimulation that can help babies growth and basic reflexes at various stages of development. The baby's movement development will be more ideal if they have the opportunity to engage in movements and physical activities that use their entire body (Anggraini & Fatrin, 2022). Baby gym stimulates the anterior pituitary gland, producing somatotropin (growth hormone) and protein deposition by chondrocyte and osteogenic cells, hence accelerating bone formation. Since the baby gym improves blood circulation, the supply of oxygen throughout the body becomes more consistent. It promotes muscular development, enhanced cell growth, balance and coordination, as well as improved attentiveness. As a result, the baby gym promotes appropriate motor development in line with the child's age and develops muscles and joints in babies in preparation for sitting, standing or walking (Zaidah, 2020).

Nothing in research is flawless, and there are still many issues that need to be addressed. The inability to schedule the research time to coincide with the sample rest hours is among the study's shortcomings.

CONCLUSION

According to the findings of the research, giving a baby gym can improve motor development in babies aged 6-9 months in the Banjar Batannyuh area.

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