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Effect of Bedincak and PGRI Gymnastics Exercises on Motor Development

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Abstract

The purpose of this study was to identify and analyze the differences in the effects of the PGRI becak gymnastic exercises for gross motor development, to analyze the differences in the impact of male and female gross motor skills, analyze the interactions of gymnastics and gross motor development between the sexes, and the Bedincak and PGRI exercises on gross motor development for male, female students. This study used an experimental method with a 2x2 factorial design. The data analysis technique used analysis of variance (ANOVA) at the significance level (> 0.05). The population is in grade 6 elementary school aged 11-16 years in Simpang Rimba District as many as 472 people. The sampling technique was a purposive sampling of 60 people. The results of this study: Based on the analysis of the study, it was found that the Bedincak Gymnastics and PGRI Gymnastics exercises are good exercises because they can affect the agility, coordination, balance, and Speed of both male and female students on gross motor development. So it can be concluded that there are differences in the effect of Bedincak and PGRI Gymnastics Exercises on Male and Female Gender Gross Motor Development, and there is no interaction between the Effects of Bedincak and PGRI Gymnastic Exercises on Gross Motor Development in Male and Female Students.

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INTRODUCTION

The world of children is a world of the play; while playing, children directly absorb what they see. According to (Damanik & Nurmaniah, 2017), "play is a need and a desire. The primary needs for elementary-age children, children's play activities will meet the requirements and needs of the development of motor, emotional, cognitive, creative, linguistic and social dimensions of society, values and attitudes towards life. Therefore, the teacher must develop a learning process that connects games with lessons. Then the teacher can move or direct children; children also learn to work or study in their groups, and the teacher creates learning opportunities. To be directly involved in learning (Veny & Prastihastari, 2015; Ramadan & Ningrum, 2019). Learning activities contain activities to train children's motor development.

According to (Suroso et al., 2013), motor development is growing and developing children's motor skills. "Motoric comes from the word 'motor', which means the biological or mechanical basis that causes movement." (Zulham, 2012, p. 5) describes "the notion of motor skills, namely all forms related to body movements based on three factors, namely; 1) Muscles, 2) Nerves, 3) Brain. The development of children's movement competence is understood from the characteristics of growth and maturity of children depending on and influencing in infancy and childhood (morphology, physiology, and neuromuscular). Because motor development occurs with special social

significance, the environment influences child growth (Venetsanou & Kambas, 2010). Movement skills have developed when nerve and muscle maturity has been reached. Children aged 11 to 15 years can use their hands and feet to carry out coordinated physical activities for flexibility, balance, strength, and coordination of body movements. Direct or indirect physical development is essential.

To be understood because it can influence the daily behaviour of children. The child's physical development directly determines a child's motor skills. Indirectly, the growth and development of the body affect how children see themselves and the people around them. The basis for further development begins with the development of the body. An increase in physical development in terms of weight, height and strength allows children to develop their physical skills further and explore the world without the role of their parents. Physical development relates to children's movements and must be learned because of their daily behaviour. -day affects the development of the body (Ramadan et al., 2020; Susanto, 2012).

Motor development has two parts, the first is the gross motor, and the second is the fine motor. Gross motor skills are formed when children, much like adults, begin to develop coordination and balance. Considerable motor skills require the coordination of specific muscles in children that can make them jump, climb, run, and ride a bicycle. At the same time, the fine motor requires eye coordination, such as drawing,

writing, and cutting. Gross motor skills require coordination of almost all parts of the child's body. Children can be motivated by teaching them to jump, climb, run, walk, etc. However, modern art is a movement that uses soft muscles to give significant effect through learning and practice opportunities, such as hand movements, scribbling, block design, writing and others (Desmita, 2012).

Gross motor activity is a movement skill whose main base is the movement of the large muscles. The motor skills in question are the size of the muscles and connected body parts combined into one, namely gross motor and fine motor skills. Synthetic motor skills include arms, legs and large muscles, such as walking and jumping (Didi Yudha et al., 2015). It is recommended to carry out integrated motor exercises to develop the ability to perform and control limb movements efficiently, including activities to train eye-hand coordination, train concentration, train self-confidence, coordination of the five senses and limbs, body balance, courage, endurance and flexibility, muscle strength, and preparation for physical activity (Lydia, 2016). Some experts emphasize the decline in children's health starting from elementary school. The leading cause is modern elementary school students' low level of motor activity. Students' interest is more in technology that cannot be restrained (Kashuba et al., 2018). Many studies in the last few decades have looked at children and adults who are less physically active, showing that the fit and the unfit have increased polarization between children (Sollerhed & Ejlertsson,

2008). However, the fact is that only some children develop at this stage. Recognizing that gross motor problems in early childhood are complex, schools must play their full role and be the first to participate in improving the various needs of students in their gross motor skills. Motor development. However, the reality is more complex than stated in various theories. Gross motor development efforts in children have not been optimal for various reasons. Using learning methods that are less fun and using media that still uses standard results makes students less motivated to be active.

There are various ways that children's physical motor skills can develop. A gymnastics is a form that can be offered. The use of active music in sports and better known by children; children are more receptive and can arouse children's interest. Gymnastics is a form of physical activity that can develop children. Because gymnastics can support children's physical development, such as muscle strength and endurance (Yuniarni, 2014), according to (Purnamasari, 2015), movement can look creative when combined with music that children express in their way. However, before a child can perform these expressive movements, he must master the variations of his body movements. So far, learning gymnastics on PJOK material increasingly makes students' gross motor skills less and less trained. Because gymnastics material is only delivered when the gymnastics chapter is explained, there are also no extracurricular activities. As a result, students

need to be more developed in mastering motion.

Based on the results of observations made by researchers at elementary schools in Simpang Rimba District, children aged 11 to 15 years and reinforced by the results of observations in previous studies (Abdillah, 2020) that given knowledge, training and skills, most of the 6th-grade students at Simpang Rimba District has little interest in aerobics. Weak motor skills and rudeness of students. This was strengthened after carrying out various test instruments such as the 4 x 10 meter shuttle run test, which was the highest for 14 seconds and the lowest could be up to 20 seconds, the throwing test catching a tennis ball which was the highest ten times and the lowest was even for those who could not throw at all in 1 minute, the 30 meter run, the highest time is 12 seconds. The lowest is 20 seconds, and the last is the stork stand positional balance test. The longest time to stay in balance is 8 seconds, and the lowest is not even up to 1 second. This means that students cannot do well and correctly, and evidence that students' gross motor skills still need to improve. This fact indicates that there is a problem that needs a solution to fix it.

Elementary schools in Simpang Rimba Sub-District have been accustomed to gymnastic movements. However, in terms of physical activity in the form of aerobics, the stimulation still needs to be improved compared to elementary schools. Grade 6 SD only learns rhythmic gymnastics, so it lacks stimulation, and children's motor coordination could be better. When students' gross motor

skills are weak, this will also affect student achievement in the O2SN event, which competes among elementary school students, where many sports require good gross motor skills, including the Bedincak gymnastics and PGRI gymnastics which competed in the Bangka Belitung archipelago province.

According to (Sulistiyo et al., 2017), a gymnastics is a form of physical exercise incorporated through systematic planning in developing skills and physical training so that the body becomes harmonious. Gymnastics can help develop motor skills such as walking, running, jumping, jumping, sprinting and walking, while non-motor skills such as balancing, twisting, twisting and bending the body. This activity can teach children the basics of brain intelligence, balance and coordination (Pradipta & Sukoco, 2013). According to Mahendra (Nisnayeni, 2012), if a child has all the elements of physical ability, it is inevitable that the child can achieve movement dexterity. So if an adult plays in a child's environment, that will count. For the development of children's motor patterns, it is recommended to do activities such as dancing, sports and gymnastics. This activity is included in the scope of physical education.

Bedincak gymnastics is a model of rhythmic gymnastics with simple movements, but each movement uses the right power. Malay dance movements and sports movements are a combination of Senam Bedincak (Disparbud, 2019). Bedincak gymnastics is the same as rhythmic gymnastics in general. However, in becak gymnastics, there is a dominant opening movement with

non-locomotor movements, movement patterns 1, 2, 3 and a series of dominant designs with locomotor movements. There are basic becak movements which are dance patterns becak, and have differences in movement with gymnastics in general because, in bedincak gymnastics, there are dance movements that train more dexterity and agility to master them.

PGRI Fitness is a PGRI core program all schools use to improve students' fitness. The gym teacher learns about warm-up, stretching, core, and recovery. PGRI gymnastics without seesaw parts are currently used in popular gymnastic activities. PGRI gymnastic movements are more assertive, simple and very beneficial for health. "Exercise, if done regularly, can melt cholesterol and improve heart health (Sultani, 2017). So, these two gymnastic movements are expected to overcome elementary school students' lack of gross and fine motor movements.

Overall, the characteristics of elementary school-age children are related to gross motor development, so the educational goals of spiritual, physical, intellectual and social development have yet to be fully achieved. The reasons for using the Bedincak and PGRI Gymnastics methods are: Based on the results of previous research (Sasi, 2011), aerobics can improve basic motor skills, including walking, running, turning, jumping and bending, and cognitive including solving simple problems in everyday life, recognising concepts numbers, recognising patterns,

recognising spatial concepts and recognising dimensions, gradually cyclically. Therefore becak gymnastics and PGRI gymnastics are expected to be able to develop students' gross motor movements.

The theoretical basis that strengthens this research is Lev Vygotsky's theory in (Wiyani, 2014). This theory emphasises that development is not only influenced by the action of biological stages but also by social stages. Vygotsky's belief in the importance of social influence on child development is reflected in the concept of the Zone of Proximal Development (ZPD), which is Vygotsky's term for a series of tasks that are difficult for children to master alone but can be learned with the help and guidance of more adults (Santrock, 2007).

METHODS

This research method is experimental with a pretest - a posttest design (Ramadan & Juniarti, 2020). The procedure used was empirical research in the form of a two-factor design. This factorial design is often referred to as the 2x2 factorial described in Table 1. In this study, purposive sampling was the sampling technique used, namely the sampling technique based on the needs required in research, research and based on gender.

Taking a sample of 60 people from a total of 472 people data, analysis techniques in this study use descriptive techniques using percentages, for calculations use SPSS 24.0 software for windows.

Table 1. Research Desig

Gender	Training Model (A)	
	Bedincak Gymnastics Exercises (A1)	PGRI Gymnastics Exercises (A2)
Men (B1)	A1B1	A2B1
Woman (B2)	A1B2	A2B2

The sample of this study was part of the 6th-grade students of SD Simpang Rimba 11-15 years, South Bangka Regency, totalling 60 people consisting of 3 schools in Simpang Rimba District, South Bangka Regency, namely SD Negeri 9 Simpang Rimba with 20 students, SD Negeri 10 Simpang Rimba with 20 students, SD Negeri 11 Simpang Rimba as many as 20 students.

The researcher conducted an initial test or pretest on all subjects in this study. However, the researcher first explained to the sample how to do the motor ability test so that the selection knew and could do the motor ability test that will be given correctly after having the initial data to identify the research sample and make data before testing the research sample. After that, the subject was given treatment in the form of Bedincak Gymnastics and PGRI Gymnastics 16 times using a frequency of 4 times a week and the frequency of Bedincak Gymnastics 3 times per meeting with a total duration of 16 minutes compared to 1-time PGRI gymnastics practice with a time of 16 minutes of treatment. After the subjects were given further treatment, all topics or samples were subjected to a final or posttest. Then, from the results of the ranking test, 30 students who were female (treatments 1 and 2) and 30 students who were male

(treatments 1 and 2) were taken. Group A bedincak and PGRI gymnastics comprised 30 female students, and group B becak and PGRI gymnastics, including 30 boys. Each group was given the becak exercise method, PGRI gymnastics, so two experimental groups were formed.

FINDINGS AND DISCUSSION

(1) There are differences in the effect of bedincak and PGRI gymnastics on overall motor development. Bedincak and PGRI exercises affect scores of agility, Speed, coordination, and balance in gross motor development of sixth-grade elementary school students in Simpang Rimba District. (2) There are differences in the influence of men and women on gross motor development. Male students are better than female students. (3) There is no interaction between gymnastics and gender on gross motor development. (4) There are differences in bedincak and PGRI gymnastics on the gross motor development of male and female students.

Findings

The research process produced comparative data between pre-trial and post-trial as a form of data used for research hypotheses. Based on the comparison results,

there was an average increase in gross motor skills. The sample with the becak exercise model is greater than the PGRI exercise in

improving gross motor development. Following Table 2 Recapitulation of Students' Gross Motor Development.

Table 2. Recapitulation of Students' Gross Motor Development

No	Gross Motor	Bedincak Gymnastics		PGRI Gymnastics	
		Lk	Pr	Lk	Pr
1	Speed	4,94	3,48	3,92	4,71
2	Coordination	13,8	7,26	21,53	15,2
3	Balance	16,41	8,08	13,48	12,7
4	Agility	0,94	0,56	1,11	0,73

The data obtained will later be used for the research hypothesis. To provide accurate and correct information, the entire data collection process will be analysed as a form of data validity. The results obtained are as follows.

The data were then tested for normality using the Kolmogorov Smirnov at a significance level of 5% ($\alpha = 0.05$), and the data was normally distributed if the significance was > 0.05 . The program used by researchers is SPSS 24 in terms of the Kolmogorov Smirnov test, and they found that the significance value of each data, namely the pre-and post-test data in Table 3, is higher than the level 0.05. The data has been declared usually distributed.

Then the data was checked for homogeneity with the Levene test (SPSS 24), and a significance value of $0.828 > 0.05$ was obtained, which means that the variance of the data between groups did not differ or had a significant consistency. Hypothesis testing was carried out using a two-way analysis of

variance (ANOVA) through the SPSS 24 program, and data were obtained.

The results of data analysis yielded answers to hypothesis 1 which stated that there were differences in the effect of Bedincak and PGRI gymnastics on gross motor development with sig description values of 0.0001, 0.000, 0,000, $0,001 < \alpha (0,05)$ and Value Fhitung (12.171), (42.348), (15.407), (12.046) $> (0.225)$. Hypothesis 2, namely that there are still differences in the impact between men & women on gross motor development with (0.0001), (0.000), (0.000), $(0.001 < \alpha (0.05)$ and Fount values (11.269), (42.348), (19.417), (12.046) $> (0.225)$. Hypothesis 3: There is no interaction between the type of exercise program and gender on gross motor development with the results Fount (0.488), (0.947), (3.039), (0.480) $> Fable (0.225)$ and sig values (0.488), (0.335), (0.087), (0.491) $> (0.05)$. Hypothesis 4 is that there are differences in the impact of bedincak and PGRI gymnastics on gross motor development of men and women, with the average results of

becak gymnastics 10.11, 18.97, 23.41, 6.11, and PGRI gymnastics 11.04, 26.10, 23.78, 6.21. male average 10.12, 26.10, 26.88, 5.93, and female average 11.02, 18.97, 20.32, 6.39.

Discussion

There is a difference based on the statistical results taken from the pretest and posttest data on the development of gross motor skills of the sixth-grade students of SD Simpang Rimba District. Based on the findings of descriptive data, we were pretesting, hypothesis testing, and discussing research results, the impact of Bedincak Gymnastics, PGRI Gymnastics, male and female sports and gross motor development in the Simpang Rimba area. This study's sample was divided into 30 men and 30 women. This research was conducted in 16 meetings to show the results of the exercises applied to 6th-grade elementary school students in Simpang Rimba District, South Bangka Regency.

Based on statistical analysis obtained on the initial and final gross motor development test. Presented points about data interpretation, analysis of the impact of research, analysis of hypotheses, and discussion of the research results on the effect of bedincak and PGRI gymnastics exercises on gross motor development. This study divided the sample into two groups, namely groups of men and women (Ramadan et al., 2021). Both male and female groups will be researched in the form of gymnastic exercises. The men's group was divided into two groups, the first group of men would do the becak exercise, and the second

group of men would do the PGRI exercise. Likewise, with the women's group, group of women, one will do the becak exercise, and group two will do the becak exercise. It is evident from the results of the ANOVA test with a sig value $< \alpha$ (0.05) and F Count $>$ (0.225). The becak exercise model is greater than the PGRI exercise in improving gross motor development, as evidenced in Table 2, Recapitulation of Students' Gross Motor Development.

This is in sync with the theoretical basis, which proves that motor development is the process of developing and growing children's motor skills. In essence, development occurs as the baby's nerves and muscles mature. Therefore, any movement, no matter how small, is a form of general interaction of various body parts and processes regulated by the brain. Children need stimulation or observational learning and know what they need to practice their motor development. There are five main points of motor development: motivation, maturity, behaviour and experience. In addition, there is also a need to fulfil development-related needs in gross motor, namely, activity in the form of films, activity in the form of rhythm, and expression through sports movements (Kristanto & Pratii, 2014).

Previous research by (Nur et al., 2017) entitled Effects of training models on leg muscle strength and power. Based on the results obtained (1), there are differences in the effect of zig-zag and cone training methods on the training side and jump strength and average zig-zag drill method of 12.76 and an

average. Cone jump agility series 13.78. A series of zig-zag exercises can increase a student's leg muscle strength.

Previous research conducted by (Puspitasari et al., 2017) on The effect of exercise on physical endurance and response to menstrual pain (dysmenorrhea). The data analysis found that the answer to hypothesis 1 was that there was a difference in the impact of Pilates and yoga on pain response. With a description of the value of $\sin 0.000 < 0.05$ and the value of $F_{\text{ount}} > F_{\text{table}}$ or $74.462 > 4.20$. There are differences in the degree of self-confidence of children before and after treatment in physical exercises that train body balance, strength, movement coordination and flexibility. Based on the above data, it can be judged that the child's movement development is good.

Previous research (Salim & Laksono, 2020) entitled Differences in the Effects of Brain Gymnastics and Rhythmic Gymnastics on Children's Motor Development Using the Narrative Review Method shows that there are children after training. In conclusion, there are differences in the effect of brain training and rhythm training on motor development in children. So the Bedincak and PGRI Gymnastic Exercises influence the results of agility, Speed, coordination and balance on development.

Gross Motor Class 6 Elementary School Students in Simpang Rimba District.

Previous research was conducted by (Kurniawan, 2016). Differences in physical growth and gross motor development of high school students at SDN Kalongan 4 Ungaran

Timur. Based on the results of statistical analysis using the t-test model, the following results can be obtained. The test results showed that the average weight of female students was 28.7 kg and that of male students was 30.9 kg, with an average difference of 2.2 kg. The average height of the female students is 133.9 cm, and the height of the male students is 136.6 cm, with a difference of 2.7 cm. The foot length for women is 79.5 cm and for men is 78 cm, with a difference of -1.5 cm. development in women is 12.5 seconds and in men is 11.5 seconds. There is no difference in the growth of male and female students, and there is a difference in the level of development of male and female students. There is a significant relationship between the growth and development of male students, but there is no significant relationship between the growth and development of female students.

Previous research was conducted by (Sardiman et al., 2017). Effects of learning methods and gender on learning volleyball passing. This research shows no difference in impact between men and women, with a significance value of 0.614 and F Count (0.258).

Previous research conducted (Permana, 2013) entitled Development of Balance in Children Aged 7 to 12 Years in terms of Gender, The results of the study concluded that boys have static and dynamic gender balance better based on the age of each group. The balanced level of Development in Demak shows that boys aged 7 to 12 years perform better than girls.

The Bedincak and PGRI Gymnastics exercises have a different effect on the results of agility, Speed, coordination and balance on gross motor development of male and female students of Grade 6 Elementary Schools in Simpang Rimba District.

Previous research conducted by (Didi Yudha et al., 2015) on The effect of the research model and students' abilities on the learning outcomes of 7th-grade soccer at Madrasah Tsanawiyah Negeri 2 Kudus, there is a relationship between the research method and students' abilities Fount (6.18) > Fable (4,35).

Previous research conducted by (Adhi et al., 2017) Effect of exercise regimens on leg muscle strength and power There is no relationship between exercise regimens and leg muscle strength and power.

Previous research conducted by (MA Noviudin et al., 2014; Aswara, 2019), The effect of the smash training model on the eye system using direct and indirect bait in badminton games, the results of this study prove that there is no relationship between the smash technique and eye coordination, sig value = 0.402 \hat{a} % \neq 5%. There was no relationship between spike training regimen and visual acuity and shooting ability. Coach Aro provides a series of spikes and immediate feedback to their athlete, the coach assessing visual processing ability.

There is a clear difference in similarities here. Namely, there is no interaction between gymnastic training methods and gross motor development. So it can be concluded that there is no interaction between Bedincak

Gymnastics and PGRI Gymnastics and Types Gender on gross motor development.

From the explanation in table 4 above, it can be concluded that there are differences in the effect of bedincak and PGRI gymnastics with male and female sex on gross motor development in elementary school students aged 11-15 years, Simpang Rimba sub-district. Evidenced by the difference, it shows that in the bedincak gymnastics exercise, the average Speed is 10.11, coordination is 18.97, balance is 23.41, and agility is 6.11, while in the PGRI gymnastics exercise, Speed is 11.04, coordination is 26.10, balance is 23.78, skill is 6.21. Meanwhile, men have an average gain of Speed 10.12, Coordination 26.10, Balance 26.88, and Agility 5.93, while women have an average income of Speed 11.02, Coordination 18.97, Balance 20.32, and Agility 6.39.

This was obtained after calculations and the reality that gender has a role that influences the results of both gymnastic exercises. In the activities carried out in the field, where male and female students are both given becak and PGRI gymnastics exercises, they can provide satisfactory results where the motor development is seen as a result of the test results presented at the end of the course. Students who have a male gender are better than those who have a female gender before the treatment is carried out.

Previous research conducted (Hambali & Suwandar, 2019; Sari, 2018) stated that in his study, it was shown that there was a significant influence between Ayo Bersatu exercise (4.15 > 3.23) and poco-poco (12.46 > 3.23) for the ability to increase VO₂max in class XI

students of Sukoharjo Pringsewu State Vocational School. Moreover, becak gymnastic exercises positively affect the Speed and agility test instrument; the test instrument has a better effect on the Pgri exercise balance and coordination.

Previous research conducted (Abdillah, 2020) Degrees of Motor Proficiency in Classes 5 and 6 at Kraton Yogyakarta State Elementary School. Based on the results of the study stated that the motor skills of male students were better than female students. Male students more often use their physical power in their activities. They are more active outside the home, for example, joining extracurricular activities or team training, for example, soccer, volleyball or futsal volleyball. In contrast, female students stay at home more often. Therefore, it is very influential on motor development. However, this study only looked at the level of motor skills without being given treatment.

CONCLUSION

Based on the results of the research and discussion of the effects of Bedincak and PGRI Gymnastic Exercises on Gross Motoric Development of Grade 6 Elementary School Students in Simpang Rimba District, the following conclusions can be drawn: (1) There are differences in the effect of bedincak and Pgri gymnastics on overall motor development. Bedincak and PGRI exercises affect scores of agility, Speed, coordination, and balance in gross

motor development of sixth-grade elementary school students in Simpang Rimba District. (2) There are differences in the influence of men and women on gross motor development. Male students are better than female students. (3) There is no interaction between gymnastics and types of gender on gross motor development. (4) There are differences in bedincak and pgri gymnastics on the gross motor development of male and female students.

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