



Journal Physical Health Recreation (JPHR)

Volume 5 Nomor 2 ; Mei 2025

<https://jurnal.stokbinaguna.ac.id/index.php/JPHR>

e-ISSN : 2747- 013X

The Effect Of Physical Activity And Motor Skills On Social Interaction In Children Aged 3-5 Years

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Abstract. This study aims to determine the influence of physical activity and motor skills on social interaction in children aged 3-5 years. This research can address the issues faced by early childhood children who lack social interaction with their peers and serve as input in program planning related to the problems that occur, namely motor skills and social interaction in early childhood, as well as broaden the understanding, especially regarding physical activity and motor skills on social interaction in early childhood. The type of research is quantitative research using the Pre-Experimental method. The population in this study consists of 30 people and the sample consists of 15 people. The data collection technique used is in the form of questionnaires or survey sheets. The data analysis technique uses a Likert scale as the scoring scale and the average value for the validation criteria using the presentation of the assessment scores. The results of this study were conducted using a One-Group Pretest-Posttest, which includes a pretest to determine the initial condition, followed by a post-test to determine whether there is an effect of physical activity and motor skills on social interaction in children aged 3-5 years after treatment. There is a significant influence between the impact of physical activity on social interaction in children aged 3-5 years and the influence of motor skills on social interaction in children. The result of the T-test for motor skills is 15.62, greater than the result of the T-test for physical activity, which is 1.5.

Keywords: Influence, physical activity, motor skills, social interaction.

1 Introduction

Physical education is a learning process through physical activities carried out to improve physical fitness, train motor skills, knowledge and healthy living behavior. Physical education is education that aims to stimulate growth and development for students from various aspects, namely motor skills, attitudes, healthy, intelligent, intellectual, and skilled movement. So that it can have a good effect on the quality of life in the future. Physical education has the goal of developing body organs in improving physical fitness health, neuro muscular development, mental and emotional development. Social development and intellectual development. Physical

education and sports are included in the standard curriculum of elementary and secondary education institutions, this education is also included in the activities held to be a medium in educational activities including as a process to develop spiritual abilities and attitudes that include intellectual, spiritual, mental aspects, and include motor skills, and social abilities related to the influence of physical activity on humans. The influence of physical activity on motor skills is a basic thing that is progress for subsequent development. Physical activity is a body movement produced by skeletal muscles that requires energy. (Alfajri & Hadi, 2024) The importance of sports and physical activity is not only limited to the physical aspect, but also has a significant positive impact on mental well-being. Physical activity can help reduce stress, improve mood, and improve sleep quality. In addition, participation in sports can also form social skills, such as teamwork, leadership, and a sense of responsibility. Prasetyo, (2019) Physical activity is a body movement carried out by skeletal muscles that releases energy which occurs through contractions in the skeletal muscles which can cause an increase in physical activity. (Ardiyanto & Mustafa, 2021) Physical activity also means multidimensional behavior defined as "behavior involving human movement, resulting in physiological attributes including increased energy expenditure and increased physical fitness. Physical activity also provides more opportunities to encourage motor nerve development to strengthen motor competence, and in children aged 3-5 years in the golden age everything is very valuable and has a lot of energy so that it is good in physical, emotional, and intellectual.

Child development is all the changes that occur in children seen from the motoric aspects, namely emotional, cognitive, and psychosocial (how children interact with their environment). According to Pebriana, (2017) explains that social interaction has dynamic characteristics. This means that social interaction can be viewed from various perspectives according to the characteristics of social interaction carried out by humans. (Birriy et al., 2020) Social interaction is a reciprocal/two-way relationship that can influence, change, or improve behavior that occurs between individuals, individuals and groups, or groups. Therefore, of course social interaction is very necessary when children enter their peer environment to interact with their peers. Social interaction has dynamic characteristics, this means that social characteristics can be reviewed from the interactions carried out by humans. In addition, children also have motor skills and play related to the development of motor movements, namely the development of body movements through coordinated activities including muscles, nerves, brain and spinal cord. (Dwiyanti, L., Kurniawati, E., Sari, A. T. R., Zawawi, M. A., & Rahma, 2023) states that motor skills are movements that can move the whole body, and motor development can be called the development of maturity and body control. Amini, M., Sujiono, B., & Aisyah, (2020) Motor development is related to the development of motor skills in children, therefore, the development of children's motor skills will be clearly visible when playing. There are two types of motor development, namely fine and gross motor skills.

Gross motor skills are body movements that involve the entire body of the child itself. For example, with the ability to run, move, kick and so on. (Artika, S., Sari, R. P., & Haryono, 2024) states that gross motor skills in children aged 3-5 years is the process of children displaying motor skills in performing physical movements. Gross motor skills begin at an early age, which is the basis for learning and performing motor skills by moving the body, for example running, jumping, climbing and so on which do require great energy. As for fine motor skills, it is the development of movement that includes small muscles. (Pura & Asnawati, 2019) This fine motor can be trained and developed through routine repetitive activities and stimulation. This can be applied to puzzle games, stacking blocks, drawing, folding paper and one of them is sticking a collage of pencil shavings. Children's fine motor intelligence varies in terms of strength and accuracy. This difference is influenced by the child's disposition and the stimulation

they receive. (Hengki Primayana, 2020) Fine motor skills are movements that involve certain parts of the body and make movements in small muscles, such as moving the fingers and precise wrist movements. Fine motor skills are individual or individual skills that are continuous with physical skills that involve small muscles or can be called small power that requires hand and eye coordination. Fine motor skills can be trained with regular stimulation. There are three basic movements, namely locomotor, non-locomotor, and manipulative. Locomotor movements are movements that can move from one place to another, for example running, walking, jumping and so on. Non-locomotor movements are movements that are done without moving or moving only in one place, for example swinging, bending, stooping, and others. Manipulative movements are movements that use objects, for example kicking a ball, hitting a ball, throwing a ball, catching a ball and others. Article 28 of the National Education System Law No. 20/2003 paragraph 1 states that early childhood is a child who is in the age range of 0-6 years. Bredekamp divides early childhood groups into three groups, namely the infant group up to two years, the three to five year group, and the 6 to 8 year group. Based on its uniqueness and development, early childhood is divided into three stages, namely the period from birth to twelve months, the toddler period (toddler) aged one to three years, the preschool period aged three to six years, and the early grade period six to eight years. The golden age is a child's golden period, namely the time when the child has a lot of excellent potential to be developed, at this time is the right time to instill the values of life, goodness, character which will later make the child's personality much better in the future. Kindergarten is a formal educational facility that aims to help lay the foundation for the development of attitudes, knowledge, creativity, skills and creativity needed by early childhood to adapt to their environment". Some early childhood in Tanjung Balai Karimun, one of which is at Maiyetrwira Kindergarten, researchers found several problems of lack of self-confidence in children which resulted in children tending to be shy and not mingling with friends of the same age and even not wanting to do activities implemented at school.

Every time it happens to the physical development of children, be it fine or gross motor skills. Physical development is very important both directly and indirectly to know the child's daily behavior, even the child's development can be hampered by various problems that start from the home environment, namely parents who always give children the freedom to use gadgets without giving a time limit for using gadgets. Children who lack parental attention are also one of the factors that inhibit children's social interaction, children's activities, and children's motor skills.

2 Method

The research model used in this study uses a quantitative method. The quantitative approach is a study that develops models or hypothetical theories related to a phenomenon. The research design used by the author is a pre-experimental research method. According to Sugiyono (2019:112), pre-experiments are those that have not been truly experimented with because external variables also influence the dependent variable. This can be caused by the absence of randomly selected samples. In this design, there are two groups selected, namely the K1 Fortunate class given physical activity treatment and the K2 Fortunate class motor skills to see social interactions in early childhood.

Physical activity treatment for children by providing games to train physical movements and allowing children to interact directly with their peers. Meanwhile, for the group of students who are given motor skills by providing animal-themed game treatment to train skills in children aged 3-5 years to be clearer, it can be seen in the following table:

Table 1. Form of Physical Activity Treatment and Motor Skills

No	Physical Activity Treatment	Motor Skills Treatment
1	Gymnastics	Frog Jumping Game
2	Jumping forward and backward	Deer and Deer Game
3	Counting to find the seat number according to the number of people on	the paper Gecko and Mosquito Game
4	Working on facial crafts, namely hair, nose, mouth.	Monkey Food Passing Game
5	Learning to match clothes for boys and girls with paper. Ducks	Gathering Game According to the Number of Numbers

The population in this study is a generalization area consisting of objects or subjects that have qualities and characteristics determined by researchers to be studied and then conclusions can be drawn. In this study, namely early childhood aged 3-5 years totaling 30 children were divided into two classes K1 Fortunate and K2 Fortunate, 15 children in class K2 Fortunate and 15 children in class K2 Fortunate. The test is a measuring tool to measure the extent of social interaction in children when doing movements with friends of the same age (Asytri, W., Trisiana, A., & Mustofa, 2023). The instrument in this study used a questionnaire on children's social interactions after being given treatment regarding children's motor skills, as well as children's activities at school through pretest and posttest. According to Nata, et al. (2023:162) to measure the difference in mean (average value) using the t-test. The data analysis technique used in this study is the t-test.

3 Result

The results of the study showed that there was an influence of physical activity and motor skills on social interactions in children aged 3-5 years after being given treatment. This study began on July 29, 2024, right on Monday at Maitreyawira Kindergarten. The initial test was carried out with the aim of determining the initial abilities of students, both from groups K1 Fortunate and K2 Fortunate. Students were given 30 minutes or half an hour to do activities according to the teacher who taught in class, namely painting and while supervising the class. This was done by researchers so that they could see firsthand how social interactions were in children when they were doing activities given by their teachers. The results of the study showed that the average pretest score for the group of students given physical activity treatment was 31.20 while the average posttest score for the group of students given physical activity treatment was 33.00. For the average pretest score for the group of students given motor skills treatment, it was 31.40, while the average posttest score for the group of students given motor skills treatment was 47.13. The following will display a descriptive analysis of the research data as follows:

Table 2. Pretest of Physical Activity on Social Interaction

No.	Class Interval	Frequency		Category
		Fa	Fr	
1	45-50	2	13,33	Very Good
2	39-44	2	13,33	Good
3	33-38	2	13,33	Enough

4	27-32	4	26,67	Not enough
5	21-26	5	33,33	Less than once
Amount		15	100%	

Based on the table, the frequency of pretest scores in class K1 Fortunate with a sample of 15 children obtained the results of the class interval 21-26 as many as 5 children (33.33%) in the Very Poor category, the interval 27-32 as many as 4 children (26.67%) in the less category, the interval 33-38 as many as 2 children (13.33%) in the sufficient category, the interval 39-44 as many as 2 children (13.33%) in the Good category and the interval 45-50 as many as 2 children (13.33%) in the Very Good category.

Table 3. Post Test of Physical Activity on Social Interaction

No.	Class Interval	Frequency		Category
		Fa	Fr	
1	46-51	1	6,67	Very Good
2	40-45	3	20	Good
3	34-39	3	20	Enough
4	28-33	3	20	Not enough
5	23-27	5	33,33	Less than once
Amount		15	100%	

Based on the table, the frequency of pretest scores in class K1 Fortunate with a sample of 15 children obtained the results of the class interval 23-27 as many as 5 children (33.33%) in the very poor category, interval 28-33 as many as 3 children (20%) in the Less category, interval 34-39 as many as 3 children (20%) in the sufficient category, interval 40-45 as many as 3 children (20%) in the Good category and interval 45-51 as many as 1 child (6.67%) in the very good category.

Table 3. Pretest of Motor Skills Against Social Interaction

No.	Class Interval	Frequency		Category
		Fa	Fr	
1	38-41	2	13,33	Very Good
2	34-37	1	6,67	Good
3	30-33	4	26,67	Enough
4	26-29	3	20%	Not enough
5	22-25	5	33,33%	Less than once
Amount		15	100%	

Based on the table, the frequency of the pretest scores of the K2 Fortunate class with 5 games made by the researcher, with a sample of 15 children with the results of the class interval 22-25 as many as 2 children (13.33%) in the very poor category. The interval 26-29 as many as 3

children (20%) in the poor category, the interval 30-33 as many as 4 children (26.67%) in the sufficient category, the interval 34-37 as many as 1 child (6.67) in the good category, and the interval 38-41 as many as 2 children (13.33%) in the very good category.

Table 4. Posttest of Motor Skills Against Social Interaction

No.	Class Interval	Frequency		Category
		Fa	Fr	
1	50-51	3	20	Very Good
2	48-49	2	13,33	Good
3	46-47	3	20	Enough
4	44-45	3	20	Not enough
5	42-43	4	26,67	Less than once
Amount		15	100%	

Based on the table, the frequency of posttest scores of class K2 Fortunate with 5 games made by the researcher, with a sample of 15 children with the results of the class interval 42-43 as many as 4 children (26.67%) in the very poor category. Interval 44-45 as many as 3 children (20%) in the poor category, interval 46-47 as many as 3 children (20%) in the sufficient category, interval 48-49 as many as 2 children (13.33) in the Good category, and interval 50-51 as many as 3 children (20%) in the Very Good category.

Analysis Requirements Testing

The data used in the normality test are the results of the Pretest and Posttest. The normality test in this study uses the Shapiro Wilk and Smirnov tests with a significance level of 0.05. The following are the results of the pretest and posttest data.

Table 5. Pretest Posttest Results

Class	Shapiro-Wilk		
	Statistic	df	Sig.
Pretest Physical Activity	.892	15	.071
Posstest Activity	.906	15	.116
Pretest Motor Skills	.900	15	.095
Posstest Motor Skills	.929	15	.263

Based on the results of the normality test using Shapiro Wilk, it is known that the significant value of the Physical Activity pretest is $0.071 > 0.05$, so it can be normally distributed, the significant value of the Physical Activity posttest is $0.116 > 0.05$, so it can be normally distributed, the significant value of the Motor Skills pretest is $0.095 > 0.05$, so it can be normally distributed, and the significant value of the Motor Skills posttest is $0.263 > 0.05$, so it can be normally distributed.

Table 6. t-Test Results

Class	Group	t _{hitung}	Criteria
K1	Physical Activity	1,5	Significant

K2	Motor Skills	15,62	Significant
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Based on the table above, it can be explained that the results of the t-test of the influence of physical activity on social interaction with a t count of 1.5, thus it can be concluded that there is a significant influence between physical activity on social interaction in children at Maitreyawira Kindergarten, while the results of the t-test of the influence of motor skills on social interaction with a t count of 15.62. Thus it can be concluded that there is a significant influence between motor skills on social interaction in children at Maitreyawira Kindergarten.

4 Discussion

Physical activity and sports motor skills have a significant influence on social interaction. This is in accordance with the results of the study (Aditia, 2015) most of the students of State Senior High Schools in Wonosobo Regency have been able to apply positive sports values in their social interactions in the school environment well. It is noted that the values of honesty, cooperation, fair play, responsibility, justice, tolerance, respect, and leadership have been applied by students in their social interactions well. There is an influence of physical activity on social interaction in children aged 3-5 years at Maitreyawira Kindergarten. Based on the results of the t-test analysis, it is known that ttable 1.5. This shows an increase in physical activity on social interaction in children at Maitreyawira Kindergarten. Thus it can be stated that there is an influence between physical activity and motor skills on social interaction in children aged 3-5 years. Children are able and happy to follow all physical activities that are carried out and implemented together according to the direction of the researcher. Thus the research hypothesis stating that there is an influence of physical activity on social interaction in class K1 at Maitreyawira Kindergarten is accepted as true. In accordance with the results of the study (Satriawan et al., 2024) Physical activity has an influence on motor skills. Children who have poor physical conditions may experience obstacles in the growth and development of their body's motor skills, while children who have good motor skills tend to experience optimal growth and development. Furthermore, according to (Kuswanto et al., 2022) Physical activity is very important for children's growth. Children can develop their mindset, dare to decide, interact with others through physical activity. In early childhood they tend to like and enjoy physical activities in the form of playing, sports, and recreation. Physical activity is done to improve cognitive, creativity, increase cooperation, and have freedom for children to think and express themselves. This is in line with social interactions in early childhood with friends in their class where physical activity can see direct interactions between children and their classmates. by carrying out these activities, conversations arise in children in lending goods or tools and helping friends when they are in trouble and others. There is an influence of motor skills on social interactions in children aged 3-5 years at Maitreyawira Kindergarten. Based on the results of the t-test analysis, it is known that ttable 15.62. This shows that motor skills have an effect on social interactions in children aged 3-5 years at Maitreyawira Kindergarten. Thus, the research hypothesis stating that there is an influence of motor skills on social interactions in Maitreyawira Kindergarten is accepted as true.

(Nurdiana, 2023) The importance of developing gross motor skills at an early age, which is an important foundation for children's physical and cognitive growth. Gross motor skills, including running, jumping, and throwing, are not only important for children's physical health but also affect their learning abilities and social interactions. Research results (Aliriad et

al., 2023) The right exercise program for improving early childhood motor skills is a program that includes physical activities such as running, cycling, and playing ball. Regular exercise programs and sports programs or gymnastics classes are also very important for parents to implement for optimal motor development. Strategies for improving children's motor skills through learning programs that include outdoor activities also have a positive effect on children's motor skills. Children should also play outdoors often and be given support. Motor training also has a major impact on cognitive, emotional, and social development which is beneficial for the development or growth of early childhood. During the implementation, children looked active and enthusiastic in the games guided by researchers so that they got a fun and not boring atmosphere in the learning process. Children are happy and joyful so that it increases social interaction between them with compactness, support from friends, sportsmanship, honesty, cooperation, responsibility, and accepting defeat well. The interaction that occurs when playing this motor skill game is clearly visible that children will continue to communicate well with their friends in teams and individuals, Even after the game is over, children interact more with their friends by discussing the games they have played earlier in learning or after learning is finished.

5 Conclusion

Based on the results of data and data analysis in the previous chapter, it can be concluded: There is an influence of physical activity on social interaction in children aged 3-5 years with ttable 1.5 There is an influence of motor skills on social interaction in children aged 3-5 years with ttable 15.62. There is a significant difference in the influence between physical activity on social interaction and motor skills on social interaction, so from the two variables it shows that both have value in social interaction, thus, motor skills have a greater influence on social interaction in children aged 3-5 years.

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