THE EFFECT OF 3M GAMES (THROWING, CATCHING, AND KICKING) ON EARLY CHILDHOOD GROSS MOTOR SKILLS

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Abstract
This study investigates the impact of 3M games (Throwing, Catching, and Kicking) on gross motor skills in early childhood in TK Harapan Bunda Empat Lawang. The research method used was an experiment with pretest and posttest control group designs. The sample of this study was 18 randomly selected early childhood children divided into two groups: the control group (n = 9) and the treatment group (n = 9). The treatment group was given an intervention in the form of 3M games for three weeks, while the control group did not receive the intervention. Data was collected using gross motor ability tests before and after the intervention. The results of the data analysis showed a significant improvement in gross motor skills in the treatment group after the 3M game intervention. In contrast, there was no substantial change in the control group. These findings indicate that 3M games effectively improve gross motor skills in early childhood. The implication of this study is the importance of including games involving throwing, catching, and kicking activities in early childhood learning programs to promote gross motor development.

Keywords: Gross motor, throwing, catching, kicking

Abstrak
Penelitian ini bertujuan untuk menginvestigasi dampak permainan 3M (Melempar, Menangkap, dan Menendang) terhadap kemampuan motorik kasar pada anak usia dini di TK Harapan Bunda Empat Lawang. Metode penelitian yang digunakan adalah eksperimen dengan desain pre-test dan post-test control group. Sampel penelitian ini adalah 18 anak usia dini yang dipilih secara acak dan dibagi menjadi dua kelompok: kelompok kontrol (n=9) dan kelompok perlakuan (n=9). Kelompok perlakuan diberi intervensi berupa permainan 3M selama 3 minggu, sementara kelompok kontrol tidak menerima intervensi. Pengumpulan data dilakukan menggunakan tes kemampuan motorik kasar sebelum dan setelah intervensi. Hasil analisis data menunjukkan peningkatan yang signifikan dalam kemampuan motorik kasar pada kelompok perlakuan setelah intervensi permainan 3M, sedangkan tidak ada perubahan yang signifikan dalam kelompok kontrol. Temuan ini mengindikasikan bahwa permainan 3M efektif meningkatkan kemampuan motorik kasar pada anak usia dini. Implikasi penelitian ini adalah pentingnya memasukkan permainan yang melibatkan aktivitas melempar, menangkap, dan menendang dalam program pembelajaran anak usia dini untuk mempromosikan perkembangan motorik kasar mereka.

Kata kunci: Motorik kasar, melempar, menangkap, menendang

INTRODUCTION

A child's education is a fundamental need. Children learn from their families from the moment they are born (Indramawan, 2020). Because it is a vulnerable and formative time for children, the early years of life are sometimes referred to as the "Golden Age" and play a pivotal role in shaping their future (Sukatin dkk., 2020). Early intervention may help children flourish in many areas of their development, including those dealing with morality, religion, socialization, emotions, cognition, language, motor skills, and the arts (Budianto, 2023; Wilis Werdiningsih, 2022) Children must receive age-appropriate stimuli because of the numerous facets of development that are within their control.

Any change in a kid may be seen through the lens of child development, which encompasses not only their physical (motor) changes but also their emotional (mental), cognitive (learning), and psychosocial (environmental) changes (Alfiyanto, 2020; Talango dkk., 2020). Gains in both height and weight are almost equal throughout childhood. There are two stages to children's motor development: the rough and the smooth. The physical-motor component is an example of the study's developmental component (Fitriani & Adawiyah, 2018; Green, 1997).

Gross motor skills can be seen in locomotor, non-locomotor, and manipulative movement abilities (Aristianti dkk., 2022; Gibton, 2011). Throwing, catching, and kicking are three critical upper-body gross motor skills. Throwing appears first before the child can see it (Zulfa, 2023) There are several ways to throw, such as swinging up, swinging down, and throwing from the side, whether done by one or two hands. Children need to have developed upper-body strength and hand-eye coordination to follow a thrown ball and grasp it in their hands, making catching a ball a more sophisticated activity than tossing it (Garrison dkk., 1999; Novita, 2021). Then kicking a ball with your legs and feet is not as easy as it seems. In this case, the child needs the ability to balance and coordinate the eyes and feet to kick the ball.

Based on observations made on group B children at TK Harapan Bunda Empat Lawang, it can be seen that based on this exposure, educators must carry out activities that support children's gross motor development while at school. One of the valuable activities in supporting this is the 3M activity (throwing, catching, and kicking) the ball. Based on these problems, researchers are interested in examining how influential 3M games are on early childhood gross motor skills.

The formulation of the problem in this study is: Is there an influence on the gross motor skills of early childhood who do not do 3M games (throwing, catching, and kicking) compared to those who do 3M games (throwing, catching, and kicking). The purpose of this study was to determine the gross motor skills of early childhood children who did not do 3M games (throwing, catching, and kicking) compared to those who did 3M games (throwing, catching, and kicking).

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Children's gross motor skills are walking with various movements, walking up and down stairs, marching, stepping, tiptoeing, throwing, catching, kicking, hula hoop, and gymnastics. The above opinion shows that 3M games (throwing, catching, and kicking) can develop early childhood gross motor skills (Maulana, 2021). According to Beaty, parents and teachers can do the following activities to stimulate children's gross motor development. It must be understood that these activities are not a complete list of gross motor skills or sequences of abilities. However, one ability may precede a sample of gross motor behavior that is important for children aged five years to master (Gameil & Al-Abdullatif, 2023; Yulindah dkk., 2022).

There are several developments to improve the motor skills of children aged 5-6 years, namely throwing, jumping, and kicking. Throwing is the act of letting go or throwing something using your hands or arms. It involves eye and hand coordination to direct the object to the desired point (Maulana, 2021; Syakur & Budianto, 2024). Rowing can involve various objects, such as balls, paper, or toys, and is an essential skill in many sports and other physical activities. Jumping is the act of leaving the surface and returning to land. It involves rapid and vigorous body movements, often using leg muscles to generate repulsion. Jumping can occur in various contexts, including play, sports, or regular physical activity. Kicking is the act of using your feet to hit or push something. It involves eye and foot coordination to direct the force precisely to the intended object. Kicking can be part of a game, sport, or other physical activity and requires strength, balance, and good coordination from the body.

METHOD

Because it summarizes the impact of 3M Games on kindergarteners' gross motor abilities, this study fits the criteria for descriptive analysis. The harapan Lawang Bunda Empat. Quantitative methods are used by the researchers. The scientific method relies on quantitative research to systematically examine its components, occurrences, and connections. Mathematical models are the end goal of quantitative research (through the help of SPSS), theories, or hypotheses related to natural phenomena. This type of research uses the Intact-Group Comparison. In this design, one group is used for research, but it is divided into two groups: half for experiments and half for the control group (Sugiyono, 2019).

The population and sample in this study were TK Harapan Bunda, located in the Talang Benteng area, Muara Pinang District, Empat Lawang District, South Sumatra, and totaled 18 children from group B. This study uses data collection techniques such as checklist

sheets, observations, and documentation. The method used to analyze data to test research hypotheses is the t-test (pair test). Before the hypothesis test, prerequisite tests are first carried out: the normalization gain analysis test, the data distribution normality test, and the variant homogeneity test.

RESULTS AND DISCUSSION

Gross Motor Skills of Group B Children in the Experimental Group
Table. Gross Motor Skills of Group B Children Before 3M Treatment

NO	TOTAL VALUE	STUDENT GRADES	PERCENTAGE	NUMBER OF STUDENTS	CATEGORY
1	80	67	77%	4	Developing Very Well
2	80	60	75%	3	Grow as Expected
3	80	48	60%	1	Grow as Expected
4	80	43	54%	1	Grow as Expected

The study involved 18 group B students as respondents, with nine students in the control group and nine in the experimental group. The experimental group was given the 3M game treatment. The results of the study can be seen in table:

Table. Gross Motor Skills of Group B Children After 3M Treatment

NO	TOTAL VALUE	STUDENT GRADES	PERCENTAGE	NUMBER OF RESPONDENTS	CATEGORY
1	80	80	100%	6	Very well developed
2	80	78	98%	2	Very well developed
3	80	77	96%	1	Very well developed

Hypothesis Testing
1. Normality Test
If the data does not follow a normal distribution, a normality test will be run. When $P > 0.05$, we anticipate a distribution and when $P < 0.05$, we anticipate a non-distribution. A distribution is considered abnormal if the significance level is less than 0.05. The study's data is normally distributed, according to the findings of the normalcy test. Using SPSS version 20.0 and the Kolmogorov-Smirnov test, we were able to determine the following findings for the normalcy test:

Table. Normality Test Output Results with SPSS

	KOLMOGOROV-SMIRNOV STATISTIC	KOLMOGOROV-SMIRNOV DF	KOLMOGOROV-SMIRNOV SIG.	SHAPIRO-WILK STATISTIC	SHAPIRO-WILK DF	SHAPIRO-WILK SIG.
Y	0.384	24	0.200	0.711	24	0.332
X	0.358	24	0.178	0.637	24	0.182

Based on the Kolmogorov-Smirnov table of tests of normality, it can be known that the significance number in the experimental class (Y) is .200, and in the control class is .178. This means that the data is usually distributed.

2. Homogeneity Test

The homogeneity test is carried out to ensure that the data set to be measured comes from a homogeneous (equal) population. Homogeneity shows that the data obtained from the study's results are homogeneous. The data group showed homogeneous or derived from populations with the same variance if the significance value > 0.05. Meanwhile, the data is not homogeneous if the significance value is < 0.05.

Table. Output Results of Homogeneity Test with SPSS

HOMOGENEITY	VALUE
LEVENE STATISTIC	0.036
DF1	3
DF2	40
SIG.	0.991

Based on the test of the homogeneity of variances table, the sig value is 0.991, and it can be concluded that the sample has the same variance.

Test Paired Sample t-Test

The paired sample t-test averages two pretest and post-test data groups. In this study, two treatments were given, namely pretest and posttest, so two data were obtained: pretest (before treatment / before using 3M games) and posttest (after treatment / after using 3M games). This paired t-test was analyzed using SPSS application version 20.0. The hypothesis tested in this study is that there is a difference in the average effect of 3M games on early childhood gross motor skills in TK Harapan Bunda Empat Lawang.

Table. Paired t-test Output Results with SPSS

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Y	1.88	24	.537	.110
	X	3.54	24	.509	.104

Paired Samples Effect Sizes

			Standardizer[a]	Point Estimate	95% Confidence Interval	
					Lower	Upper
Pair 1	Y - X	Cohen's d	.702	-2.374	-3.158	-1.577
		Hedges' correction	.726	-2.296	-3.053	-1.525

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation of the mean difference

Paired Samples Test

		Paired Differences							Significance	
					95% Confidence Interval of the Difference					
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	One-Sided p	Two-Sided p
Pair 1	Y - X	-1.667	.702	.143	-1.963	-1.370	-11.632	23	.000	.000

Based on the Paired Sample t-test table, a significance of 0.000 was obtained, which is less than the significant level of 0.05. That is, there is a substantial difference between the average value before the 3M game is applied and after the 3M game is applied. Based on the research results, it is known that children's gross motor skills develop very well through 3M games. This is evidenced by the significant difference (0.001 < 0.05) between the group that did not play 3M games and those that did 3M games.

Nurani et al. state that activities including tossing, catching, and kicking may help youngsters improve their gross motor abilities. Among the most important gross motor abilities for the upper body are throwing and catching. The youngster flings it before he or she can catch it (Nurani dkk., 2020). Catching is more complex than throwing because, besides having upper body maturity, children also need eye and hand coordination to track and catch the thrown object with their hands. In addition to throwing and catching, kicking is essential because it will train the coordination between the eyes and feet. Therefore, 3M games are very suitable for early childhood training to be physically strong. The conclusion is that 3M games are physical activities that can help children's gross motor development to be more optimal. Maximum gross motor skills are positively correlated with children's fine motor skills and concentration levels when listening to lessons in class (Fadjariyanti & Fathiyah, 2022).

CONCLUSION

Studies on the effect of 3M games (throwing, catching, and kicking) on early childhood gross motor skills in TK Harapan Bunda Empat Lawang show that these activities can potentially improve children's gross motor skills. By involving diverse movements, 3M games can help children develop body coordination, strength, and gross motor skills in a fun and effective manner.

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