Volume 7 Issue 1 (2023) Pages 107-114
Golden Age : Jurnal Pendidikan Anak Usia Dini
ISSN: 2580-5843 (Online) 2549-8371 (Print)
https://ejournal.unisba.ac.id/index.php/golden_age/article/view/11844

GROW MOVEMENT GAME IN SUN EXPOSURE TO INCREASE CHILDREN'S GROUND-LEVEL MOTOR SKILLS

Munasri[1]✉ , **Sukiman**[2]
(1)(2) Postgraduate in Early Childhood Education, Panca Sakti University Bekasi
DOI: 10.29313/ga:jpaud.v7i1.11844

Abstract

This research aimed to determine if children aged 5-6 at Setyara Wardani Kindergarten in the Jatiasih District of Bekasi City, West Java, improved their gross motor skills after participating in rough movement games while outside in the sun. This study takes a quantitative approach, adopting an experimental methodology and employing a one-group pre-and post-test design for its experimentation. Twenty-eight children from TK Setyara Wardani's group B4 served as participants. This investigation employed a Likert-scale rubric for data gathering using tests and observation sheets. Descriptive statistics and the paired-sample t-test are employed to evaluate hypotheses and draw conclusions from the data. The above table from the Paired Samples Test shows that when the sig. (2-tailed) is 0.000 0.05, H_0 is rejected, whereas H_1 is accepted. As a result, we can infer that children's gross motor abilities generally improve during the pre-and post-test periods, suggesting that they gain strength and coordination while engaging in roughhousing in the open air.

Keywords: Gross Motor Skills; Gross Movement Play; Sun Exposure.

✉ Corresponding author :
Email Address: munasriasri7@gmail.com
Received May 09, 2023, Accepted July 18, 2023. Published July 22, 2023.

DOI: 10.29313/ga:jpaud.v7i1.11844

INTRODUCTION

The unprecedented global pandemic of Coronavirus illness (COVID-19) in 2019 has consequences on many facets of life, especially the health and development of children. Distance policies, policies that separate families and communities, policies that convert traditional classroom instruction to self-directed study at home (also known as "PJJ" or "BDR"), and other policies that last longer than two years (roughly 28 months) are all likely to stunt a child's development. child growth and progress. The Ministry of Education and Culture claims that the widespread spread of the COVID-19 virus has resulted in a decline in students' ability to learn. (Hamsa Ramadhan et al., 2022; Mulyani, 2020; Pengelola Web Kemdikbud, 2020). One of the activities greatly affected is reduced physical activity and sun exposure.

During a pandemic, children are encouraged to stay at home to avoid contracting COVID-19, so they only spend time playing gadgets or just playing in the house. Monotonous activities that children carry out every day, such as playing with gadgets, will make them less mobile to train their gross motor skills and socialize less with their peers. Today, with the development of technology, children prefer to play with gadgets even when they are playing together. The lack of interaction between one child and another causes children to move less; they only focus on each other.

Children's growth includes the expected and important development of their gross motor skills. Gross motor skills refer to the ability to move the body using large muscle groups or a large number of limbs. Body movements (such as walking, jumping, jogging, climbing stairs, descending stairs, throwing, etc.) Young people who can engage their major muscle groups with greater dexterity tend to have more confidence in their own abilities and come up with original solutions to the problems they face.

Children whose motor skills have developed have higher self-esteem and a more positive view of their own cognitive abilities, several studies have found (Agustiani et al., 2022; Isnaini & Katoningsih, 2022; Lysniak, 2020; Song et al., 2022). If children love to travel, they will continue to do so even as they get older. Clearly, this impacts the future adult health of young people. In young children, there are three stages of development, from cognitive to associative to autonomic motor. Cognitive level, when the child is assigned to learn to appreciate his own motor skills. Children can acquire the ability to avoid mistakes during the associative stage. Furthermore, when a child reaches the autonomous stage, he or she begins to make progress because there are more efficient responses to prevent future mistakes (Sujiono, 2015). Mastery of gross motor skills is an investment in a child's future.

Children between the ages of four and five often develop a variety of gross motor skills, including the ability to stand on one foot for eight seconds or more, jump in strides between 28 and 35 inches wide, and jump on one foot. no rules and catches a ball from five feet out with just one or two tries (Kusumaningtyas, 2016).

Some parents in large urban areas may choose to provide their children with technology over traditional parenting methods. Today's children tend to stay out of the house, spend more time sitting, and have less energy to play games due to technological advances, which have the unintended consequence of improving their cognitive and fine motor skills through online game play. Researchers at Setyara Wardani Kindergarten in Jatiasih District, Bekasi City, West Java, observed a group of 28 children aged 5–6 and found that their gross motor skills were still developing, with some children unable to jump, others unable to run fast and balanced, some can't throw properly, and some can't kick on target. Problems in grade 4 are driving a new approach to problem solving in 2022/23 at Setyara Wardani Kindergarten in Jatiasih District, Bekasi City, West Java. Exposure to sunlight while playing gross motor games is one way to help children develop their motor skills.

As stated in the 2013 Peraturan Presiden RI No. 60, rough play in which children are exposed to the sun and other elements is considered a form of service aimed at meeting the children's requirements as a whole. PP No. 17 of 2010, Article 1 point 3 defines early childhood education as "a coaching effort aimed at children from birth to the age of 6 (six) years, which is carried out through the provision of educational stimuli to help physical and spiritual growth and

DOI: 10.29313/ga:jpaud.v7i1.11844

development in order to prepare children for further education," so this is in line with the goals of implementing early childhood education (Peraturan Presiden RI No 60 Tahun 2013, 2013).

METHODOLOGY

Quantitative methods were used in this study. According to (Sudjana, 2013), positivism, the philosophical foundation of quantitative research, places an emphasis on the study of objective phenomena through the use of numbers, statistical processing, structured experiments, and other such methods.

While a quasi-experimental research design was adopted for this study. The purpose of experimental research is to determine the impact of interventions on target populations in a well controlled setting (Sugiyono, 2015). To test the hypothesis that a treatment has an effect on the study's subject is the goal of experimental research. To answer this question, researchers typically compare treated experimental groups with untreated control groups (Suharsimi;, 2013).

The design in this study used a one-group pretest-posttest design; this research design was carried out pretest before being given treatment and posttest after being given treatment to children. Thus, the results will be known to be more accurate because they can be compared before and after being treated (Sugiyono, 2015). The design of the one-group pretest-posttest is as follows:

$$O_1 \; X \; O_2$$

Information:
O1 = Result before being given treatment
O2 = Result after being given treatment

The treatment given to children in this study used rough movement games carried out under exposure to the sun. Based on previous research, children do not get direct experience when playing in space. In this game of rough movements in the sun, there are five game modifications. The games are running, jumping, walking across the boardwalk, putting in the ball (basketball game), catching the ball, kissing the knee in a stretched sitting position, kissing the floor in an extended sitting position, holding the digital grip, and swinging on the flat bar for 1–5 minutes. In this rough movement game, the child must do all five games until they are finished.

The sampling technique used in this study was a purposive technique, meaning that sampling was not based on random, regional or strata, but based on considerations that focused on a particular objective. The population in this study were students aged 5-6 years, children in group B4 TK Setyara wardani who had motor difficulties. The total population is 28 children. The sampling technique is to determine the sample to be used in research, there are various sampling techniques used including Probability Sampling and NonProbability Sampling. In this study the authors used a saturated sampling technique found in Non-Probability Sampling.

So from the explanation of the sampling technique above, the writer does not determine the sample, because all members of the population will be studied. The samples taken by the researchers were all children aged 5-6 years, namely children in group B4 TK Setyara wardani. Then the sample is the size of the population, namely 28 children.

Variables in the study "Improvement of Children's Gross Motor and Vitamin D through Gross Movement Games in Sun Exposure" can be divided into independent variables, dependent variables, and control variables. The independent variable in this study was "rough play in sun exposure". Rough movement games are physical activities that involve gross body movements using games, namely running, jumping, walking across the boardwalk, inserting the ball (basketball game), catching the ball, kissing the knees in a stretched sitting position, kissing the floor in a stretched sitting position, the child holds digital grip, the child swings on a flat bar for 1-5 minutes. The dependent variable in this study is "gross motor improvement". Improvement in gross motor skills can be measured using tests that measure a child's gross motor skills.

DOI: 10.29313/ga:jpaud.v7i1.11844

Test of Gross Motor Development (TGMD-3): TGMD-3 is a test measuring a child's gross motor skills which includes 12 gross motor subtests, such as walking, jumping, throwing, catching, and so on. This test can be used for children aged 3-10 years.

In research, it is necessary to test hypotheses in order to demonstrate their veracity. The researcher utilized SPSS for Windows Release 20 and the paired sample t-test to examine this hypothesis. A different kind of test for two paired samples is the paired sample t-test. In a paired sample, identical individuals receive opposite interventions. The research model is analyzed before and after being put through this alternative test model. The paired sample t-test is one of the procedures used to evaluate the therapy's efficacy, as indicated by a change in the mean before and after administration of the treatment (Priyatno, 2014). The test presupposes that both sets of data came from the same set of experiments or observations. There needs to be a normal distribution for the mean difference. It's possible for the variances of the various factors to be the same or distinct. This analysis requires data measured on an interval or ratio scale. In paired samples, we use the same sample but administer the test twice, either at regular intervals or at irregular ones. A 5% dissimilarity between the independent and dependent variables was used in the statistical analysis.The form of the hypothesis of the mean difference test is as follows: H_0: There is no mean difference in the pre-test and post-test results. H_1: There is a difference in the average results of the pre-test and post-test.The test criteria are 0.05; if the P-value (sig) is 0.05, Ho is rejected, and if the P-value (sig) is 0.05, H_0 is accepted. The calculation of the average difference is done with the help of the SPSS 20.00 software program for Windows.

RESULTS AND DISCUSSION

The Kolmogorov Smirnov test was utilized to examine the normality of the data (Ghozali, 2018). If the Asymp.Sig (2-tailed) value of the residual variable is greater than 5%, or 0.05, then the data is considered normally distributed, or pass the normality test; otherwise, the data is considered non-normally distributed, or fail the normality test. Table 1 displays the outcomes of the study's normalcy test.

Tabel 1 One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		284
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	1.43262671
Most Extreme Differences	Absolute	.192
	Positive	.192
	Negative	-.092
Test Statistic		.194
Asymp. Sig. (2-tailed)		.082[c]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

According to the SPSS results table, the two-tailed significance level of Asiymp.Sig is 0.082, which is more than the threshold of significance set by the software. Therefore, the data is regularly distributed, as determined by the criteria stated in the Kolmogorov-Smirnov normality test. The normality conditions of the regression model have therefore been satisfied.

The data has been tested and found to have a normal distribution. Then, the testing of hypotheses can begin. The paired sample t test was employed in this work to examine hypotheses, with the assistance of the SPSS 20 statistical package. The purpose of this t test is to see if early childhood gross motor abilities change significantly between before and after testing. The 5% (or 0.05) error threshold is implemented. The estimated t value or the sig probability value are used as decision-making guidelines in the paired sample t test. If the estimated t-value is in the Ho rejection area and the Sig. 2 tailed 0.05, then the pre- and post-test mean scores are different. This suggests

DOI: 10.29313/ga:jpaud.v7i1.11844

that games involving large movements are beneficial for developing children's gross motor skills. There is no significant difference between the pre- and post-test results if the estimated t value falls within the acceptability area of H0, the probability value, or Sig. (2-tailed) > 0.05. Consequently, early childhood children will not benefit from playing games that include large amounts of physical exercise.

The results of the paired samples t-test for improving children's gross motor skills through play with rough movements in sun exposure can be seen in table 2 as follows:

Tabel 2 Paired Samples Statistic

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretes	59.67	28	19.68392	3.71991
	Postes	84.52	28	7.53108	1.42324

A summary of the descriptive statistics for the two samples (pre- and post-test scores) is provided in this output. The median score on the pretest indicates a mean learning outcome of 59.67. The mean value of learning outcomes as measured by the score at the end of the course is 84.52. The research sample consisted of 28 participants, all undergraduates. The pre-test standard deviation was 19.68392, and the post-test standard deviation was 7.53108. Finally, there's STD's worth. Pre-test mean error was 3.71999, while post-test mean error was 1.4232.

Descriptively, there is a difference in children's average gross motor abilities between the pre- and post-test findings, as the average pre-test value was 59.67 and the average post-test value was 84.52. In addition, the "Paired Samples Test" output table requires interpretation in order to demonstrate whether or not the difference is in fact real (significant).

Tabel 3 Paired Samples Correlation

		N	Correlation	Sig.
Pair 1	Pretes & Postes	28	.265	.172

The output seen above represents the results of the correlation test, which examines the association between two variables (here, the pre-test variable and the post-test variable). From the results above, we can infer that the correlation is 0.265 and the significance level is 0.172. A lack of correlation between the two sets of data can be inferred from the null hypothesis that Sig. 0.172 > 0.05.

Tabel 4 Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Pretes - Postes	-24.851	19.118	3.613	-32.265	-17.438	-6.878	27	.000

This third output is the most important output, because it is in this third part that we will find answers to the question, namely whether or not there is an increase in children's gross motor skills through playing rough movements in the sun.

DOI: 10.29313/ga:jpaud.v7i1.11844

Based on the "Paired Samples Test" output table above, it is known that the value of Sig. (2-tailed) is 0.000 0.05, then H_0 is rejected and H1 is accepted. So it can be concluded that there is an average difference between the pre-test and post-test children's gross motor skills, which means that there is an increase in the children's gross motor skills through playing rough movements in sun exposure.

The "Mean Paired Differences" result of -24.851 is also included in the output table for the "Paired Samples Test" shown above. The average pre-test children's gross motor skills were 59.67, and the average post-test children's learning outcomes were 84.52, so the difference between the two is -24.851, with a 95% confidence interval ranging from -32.265 to -17.438.

Based on the results of research using rough movement games in sun exposure, it showed that all subjects obtained posttest scores that were better than the pretest results. Gross motor skills require coordination in the student's limbs as well as coordination between hands and feet, feet and eyes, or eyes and hands in children 5–6 years old who are experiencing difficulties in coordinating their limbs, especially in gross motor skills. Gross motor movement is an ability that requires coordination of most parts of the child's body; therefore, it is important for students to train gross motor skills in order to coordinate body parts when carrying out activities that require gross motor skills (Sihite & Dimyati, 2022).

Learning Children's gross motor skills, which include elements of speed, agility, balance, coordination, flexibility, and strength, are the primary focus of outdoor playtime instruction. Teachers should walk with kids while they engage in rough movement games while outside in the sun, and provide them examples of how to play the games before they begin. In line with Vygotsky's position in Budiningsih (movement game activities in sun exposure is to accompany students in the activity process and provide examples prior to the beginning of the activity's implementation), this is true. As Vygotsky argues in Budiningsih (2017), children require help learning, especially in challenging situations like rough-and-tumble games, before they can internalize what they're being taught or develop instrumental abilities. focused on the development of the child's specific gross motor skills, which include elements of strength, balance, and agility. Before students begin playing a gross movement game, the teacher's job is to walk them through the steps and set a good example. As Vigotsky argues in Budiningsih (2017), children require help learning, especially in challenging situations like rough-and-tumble games, before internalization happens or before instrumental talents are created (Budiningsih, 2017).

The study's findings suggest that playing activities that include large muscle movements can assist youngsters ages 5 to 6 develop their gross motor abilities and strengthen their bodies. The development of a child's gross motor abilities is influenced by the child's own level of maturity, as stated in the view (Baan et al., 2020). Because playing physical games can increase one's motor skills, particularly one's gross motor skills, kids may be training muscles they already possess without even recognizing it. The subjects were observed engaging in rough movement games such as walking, leaping, jogging, and playing basketball. Rough movement games are defined as abilities that improve with development and are more functional in nature, which is in line with the findings of (Y Yuliani, K Khojir, 2021). Playing games that require children to use their whole bodies, such as running, leaping, and walking, can have a positive impact on kids' ability to develop their gross motor skills. Rough movement games are ones in which the youngster is encouraged to run, step, or leap around in an open area (Nurlailah, 2022). A p-value of 0.031 was calculated from the data using the sign test. P is based on findings from post- to pre-tests of gross motor abilities utilizing games that encourage physical activity.

CONCLUSION

After reviewing the literature and discussing the findings, it is clear that children's rough movement games played in the sun have a positive effect on the development of their gross motor abilities. According to the results of the t test at the p 0.05 level, specifically, sig = 0.000, the percentage increase in children's gross motor skills was 24.85%. This improvement was seen across

DOI: 10.29313/ga:jpaud.v7i1.11844

the board, but was most pronounced in the areas of developing children's gross motor skills, such as speed, agility, balance, coordination, flexibility, and strength.

REFERENCES

Agustiani, S., Kurniawati, R., Rohmah, S., Hataul, S., Naruvita, S. R., & Sudarya, A. (2022). perkembangan Motorik Kasar Melalui Permainan Lompat Tali Pada Anak Kelompok A Di Lembaga Ra Al-Istiqomah Gsi. *Jurnal Pendidikan Indonesia*. https://doi.org/10.36418/japendi.v3i10.1207

Budiningsih, C. A. (2017). Karakteristik Siswa Sebagai Pijakan Pembelajaran. In *UNY Press*.

Ghozali. (2018). Ghozali. Uji Koefisien Determinasi. *Journal of Management and Business*.

Hamsa Ramadhan, A., Fadillah, H., Khaliza, R., & Nasution, I. (2022). Penerapan Kurikulum Darurat sebagai Strategi Pendidikan dalam Kondisi Pandemic Covid-19. *Edumaspul: Jurnal Pendidikan*. https://doi.org/10.33487/edumaspul.v6i1.2383

Isnaini, R., & Katoningsih, S. (2022). Problematics of Improving Fine Motor Abilities of Children Age 5-6 Years. *Early Childhood Research Journal (ECRJ)*. https://doi.org/10.23917/ecrj.v4i1.11857

Kusumaningtyas, L. E. (2016). Bermain Dalam Rangka Mengembangkan Motorik Pada Anak Usia Dini. *Jurnal Indria (Jurnal Ilmiah Pendidikan Prasekolah Dan Sekolah Awal)*. https://doi.org/10.24269/jin.v1n1.2016.pp32-41

Lysniak, U. (2020). Motor skill equity: Physical literacy and the rise of low skilled students. *International Journal of Physical Education*. https://doi.org/10.5771/2747-6073-2020-1-2

Mulyani, E. (2020). Inilah Perubahan Kebijakan Pendidikan Selama Masa Pandemi Covid-19. *Sekretariat Kabinat Republik Indonesia*.

Nurlailah, R. (2022). Pengaruh Permainan Jejak Kaki terhadap Kemampuan Motorik Kasar Anak Usia 5-6 Tahun di TK Mandiri Pitue. *Indonesian Journal of Early Childhood: Jurnal Dunia Anak Usia Dini*. https://doi.org/10.35473/ijec.v4i1.1315

Pengelola Web Kemdikbud. (2020). Kemendikbud Terbitkan Pedoman Penyelenggaraan Belajar dari Rumah. In *Jakarta, 28 Mei 2020*.

Peraturan Presiden RI No 60 Tahun 2013. (2013). *Pengembangan Anak Usia Dini Holistik-Integratif*. 19.

Priyatno, D. (2014). Belajar Alat Analisis Data dan Cara Pengolahannya dengan SPSS Praktis dan Mudah Dipahami. In *Media Com*.

Sihite, J., & Dimyati, D. (2022). Pengaruh Permainan Sirkuit Pos Geometri Terhadap Motorik Kasar Anak Usia 5-6 Tahun. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*. https://doi.org/10.31004/obsesi.v6i3.1896

Song, H. Q., Lau, P. W. C., & Wang, J. J. (2022). Investigation of the motor skills assessments of typically developing preschool children in China. *BMC Pediatrics*. https://doi.org/10.1186/s12887-021-03098-w

Sudjana, N. (2013). Dasar-dasar proses belajar. *Jurnal Pendidikan*.

Sugiyono. (2015). Metode Penelitian Pendidikan. Bandung. In *Metode Penelitian Pendidikan (Pendekatan Kuantitatif, Kualitatif, dan R&D)*.

Suharsimi;, A. (2013). Dasar-Dasar Evaluasi Pendidikan. In *Jakarta: Bumi Aksara*.

Sujiono, B. (2015). Metode Pengembangan Fisik. In *Universitas Terbuka2*.

Y Yuliani, K Khojir, M. M. (2021). Peningkatan Motorik Kasar Anak Melalui Bermain Melempar dan Menangkap Bola Menggunakan Metode Demonstrasi. *Sultan Idris Journal of Psychology and Education*.

DOI: 10.29313/ga:jpaud.v7i1.11844