

THE EFFECT OF EGRANG TRADITIONAL GAME TOWARD THE IMPROVEMENT OF PHYSICAL ACTIVITIES FOR THE 10-12 YEAR CHILDREN

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Abstrak

Permasalahan saat ini adalah anak malas bergerak/sedentari diakibatkan karena perkembangan teknologi dan dampak langsungnya adalah menurunnya kemampuan, keterlambatan perkembangan dan pertumbuhan anak. Salah satu aktifitas fisik yang dianjurkan adalah dengan permainan tradisional egrang. Tujuan dari penelitian ini mengetahui pengaruh permainan tradisional egrang terhadap peningkatan aktifitas fisik anak usia 10 – 12 tahun. Penelitian ini adalah kuantitatif deskriptif dengan populasi responden berjumlah 40 anak, usia 10 – 12 tahun, berjenis kelamin laki-laki. Parameter yang diukur adalah; kekuatan, keseimbangan, koordinasi, daya tahan, dan kelincahan. Hasil penelitian menunjukan terjadi peningkatan aktifitas fisik yang signifikan untuk koordinasi, sedangkan kekuatan, daya tahan, dan keseimbangan tidak begitu signifikan dan kelincahan justru terjadi penurunan. Dapat disimpulkan permainan egrang dapat meningkatkan koordinasi anak.

Kata Kunci: Anak, Aktifitas Fisik, Egrang

Abstract

The current problem was that children are lazy to move / sedentary due to technological development and the direct impact was decreased ability, delay in development and growth of children. One of the recommended physical activities was with stilts as a traditional Game. The purpose of this study was to determine the effect of engrang traditional games on increasing physical activity of children aged 10-12 years. This research was quantitative descriptive with a population of 40 children, aged 10-12 years, male sex. The parameters measured are; strength, balance, coordination, endurance, and agility. The results showed a significant increase in physical activity for coordination, while strength, endurance, and balance were not so significant and agility actually decreased. It was concluded that play engrang could improve children's coordination.

Keywords: Children, Physical Activity, Egrang

Introduction

Children are a period of growth and development. To achieve the growth and development of children, in addition to nutritional factors also require good

physical activity. The problem currently faced is that children become passive or lazy to move / synchronize due to technological developments such as television, cell phones (social phones), social media, online games and so on, Sjafrina (2014). Children are sedentary due to changes in lifestyle and environment. While there is a continuing increase due to a lifestyle transition that used to require all human physical labor and is now facilitated with the help of technology, Julia et al (2016).

The direct impact felt by such lifestyles is decreased ability, delay in development and growth of children, Sjafrina (2014). The lower the physical activity is, the higher the symptoms of hypokinetic disease (lack of movement). Lack of movement can cause a greater risk of decreasing physical function of the body, Sutri (2014). The reduced physical function of the body can result in cardio metabolic diseases such as; obesity, coronary heart disease, insulin resistance, dyslipidemia and hypertension.

In children aged 7-12 years, physical activity is very important to be introduced to the children. Physical activity is recommended for growth and coordination that will continue to experience improvement in children, Karwur (2016). Good physical condition will greatly affect the function and organism system of the body, Ujang R, Yusuf (2019). One of the recommended physical activities is with traditional games. Traditional games are cultural activities consisting of elements of motion, art and local cultural values that are spread in the community. Unwittingly traditional games can stimulate children in developing cooperation, helping children adjust, interact positively with each other, can condition children in self-control, develop empathy for friends, obey rules, respect for others, and the purpose of traditional games is to have fun . Thus, the traditional game can have a very good impact in helping develop children's skills, Nur (2013).

Egrang traditional game can be played by children and adults. Egrang is a traditional game using a pair of bamboo / wood for walking. The stilts have a stick-like shape, the height for a pair of bamboo in stilts for children aged 10 - 12 years is 170 cm, with egrang required skill to maintain balance and confidence while riding the stilts, Ovieta (2016). Children aged 7 - 12 years have a desire to do physical activities, this provides the possibility to improve the quality of physical activity and movement abilities become larger and children begin to participate in various physical activities, Permana (2013).

The way to find out the quality of a child's physical activity abilities is to measure physical activity. In general, the components of measuring physical activity consist of strength, balance, coordination, endurance and agility, Sutri (2014). The purpose of this study was to determine the effect of Egrang traditional games on increasing physical activity of children aged 10-12 years.

Method

This research was quantitative descriptive. The study was conducted at Plumutan Primary School, Bancak District, Semarang Regency for 1 month.

Respondents were 40 students, aged 10-12 years, male. This measurement was conducted pre test and post test which included 5 components namely 1) Strength test with push-ups 2) Standing balance test with one foot 3) Catching coordination test using tennis balls 4) Endurance test with harvard step 5) Agility test with a 4 × 10 meter shuttle run.

Data collection was by testing and measurement, while the data analysis technique used in this study by using the normality test was conducted to determine whether the data had a normal distribution. To find out the influence of the Egrang game before and after the treatment carried out by t test, the results of the analysis stated there were differences if the significance value was less than 0.05 (P <0.05).

Discussion

The results of physical activity measurements with 5 parameters (strength, balance, coordination, endurance, and agility) were shown in table 1. Results of Physical Activity Measurement Using Egrang Game

Table 1. Results of Physical Activity Measurement Using Egrang Game

Sample	Strength		Balance		Coordination		Endurance		Agility	
	A	B	A	B	A	B	A	B	A	B
1	17	11	5.79	7.54	2	8	58	47	22.19	12.79
2	20	30	3.32	4.62	2	6	12	25	20.07	13.79
3	10	22	10.8	12.15	2	5	15	48	19.4	12.6
4	20	36	5.43	2.39	1	1	20	61	22.8	15.75
5	12	15	4.81	9.73	5	11	24	33	23.35	14.1
6	24	35	12.88	4.03	5	8	45	53	21.88	12.91
7	27	31	6.1	11.21	4	16	52	70	20.47	12.65
8	34	35	6	7.32	1	17	60	75	17.33	11.42
9	14	7	4.53	5.28	4	9	28	23	19.53	13.97
10	15	15	6	7.66	3	11	46	23	20.51	14.42
11	11	11	3.22	7.23	5	14	16	40	19.58	14.01
12	28	40	3.45	10.95	3	15	57	46	19.06	13.9
13	21	30	3.25	5.89	4	6	21	44	23.73	16.6
14	20	26	4.1	4.73	5	15	11	13	22.21	13.47
15	25	11	7.23	4.23	1	6	6	40	21.96	17.37
16	15	8	9.72	3.01	1	8	31	39	20.13	15.16
17	20	30	10.21	11.35	3	7	14	19	20.05	16.39
18	20	23	6.26	6.45	7	16	41	60	17.35	11.34
19	19	11	8.37	5.25	1	4	8	20	20.36	12.93
20	18	25	3.26	6.2	3	15	42	43	23.93	15.86
21	18	26	4.61	10.2	3	14	45	39	23.95	17.87
22	27	40	14.33	4.37	3	8	53	36	17.92	15.32
23	36	52	4.88	30.86	7	13	34	50	19.88	17.63
24	10	17	2.52	5.33	6	5	11	16	19.88	17.25
25	21	6	13.33	6.55	5	16	34	36	15.68	13.43

26	25	18	16.88	5.68	5	8	34	36	20.88	17.82
27	35	30	3.61	6.14	7	16	60	48	19.3	18.8
28	31	23	5.99	3.36	4	7	60	30	19.4	19.39
29	15	15	1.92	6.01	3	6	55	10	20.39	19.01
30	18	11	2.55	3.94	2	14	26	29	20.62	18.21
31	13	20	3.87	3.21	5	12	60	25	18.03	16.17
32	11	13	6.28	4.27	2	10	50	39	21.17	19.87
33	22	15	3.46	7.83	6	8	24	26	21.1	20.18
34	20	20	17.5	13.85	6	14	58	43	14.08	12.29
35	40	21	3.32	2.84	9	18	43	44	19.08	18.08
36	15	15	3.93	2.04	6	18	25	28	19.48	18.48
37	40	30	4.26	11.85	6	16	60	65	14.09	13.59
38	17	12	2.99	2.95	2	3	34	30	15.3	14.3
39	22	30	25.74	5.09	6	13	44	52	15.55	14.59
40	30	25	5.85	12.07	3	10	33	33	18.54	16.54

A: Pretest B: Post Test

Data normality test was conducted to find out whether the data had a normal distribution. The data was stated to be normally distributed if the significance value was greater than 0.05 or $P > 0.05$ which was seen in table 2. Analysis of the test game normality of Egrang to increase physical activity of children aged 10.

Table 2. Analysis of the test game normality of Egrang to increase physical activity children aged 10 - 12 years.

Variable	Pre Test (Pv)	Post Test (Pv)
Strength	0,024654	0,11045
Balance	1,82E-06	2,52E-07
Coordination	0,05521	0,06813
Endurance	0,01836	0,78846
Agility	0,10016	0,13999

From the analysis it was known, for pre-test only coordination and agility were normally distributed, while post test were all normally distributed except the balance variable seen from the P value.

T-test was conducted to determine whether there were differences between pre-test and post-test of the five variables tested. The test results were stated with a significance value of less than 0.05 ($P < 0.05$) then there was a difference between the post test and pre test. The results of the T test analysis were shown in table 3. T test.

Table 3. T test, the effect of stilts playing on increasing physical activity children aged 10 - 12 years.

Variable	Test	Mean	T Test	Sig
Strength	Pre Test	21,4	-0,62513	0,53553
	Post Test	22,275		

Balance	Pre Test	6,81E+00	-0,29865	0,76679
	Post Test	7,14E+00		
Coordination	Pre Test	3,95	-10,844	2,46E-13
	Post Test	10,675		
Endurance	Pre Test	36,25	-0,76892	0,44657
	Post Test	38,425		
Agility	Pre Test	19,75525	9,27148	2,08E-11
	Post Test	15,50625		

From the results of the analysis showed only the coordination variables (2.46E-13) and endurance (0.44657) were significantly different. The strength variable, the balance also increased but not significantly, while the agility variable actually decreased.

The results of the assessment of variables based on the grouping of categories were shown in table 4. The results of the assessment of each physical activity variable by using Egrang. The categories of each variable were grouped in A (excellent), B (good), C (moderate), D (poor), E (very poor).

Table 4. Assessment Results of Each Physical Activity Variable with Using Egrang Game.

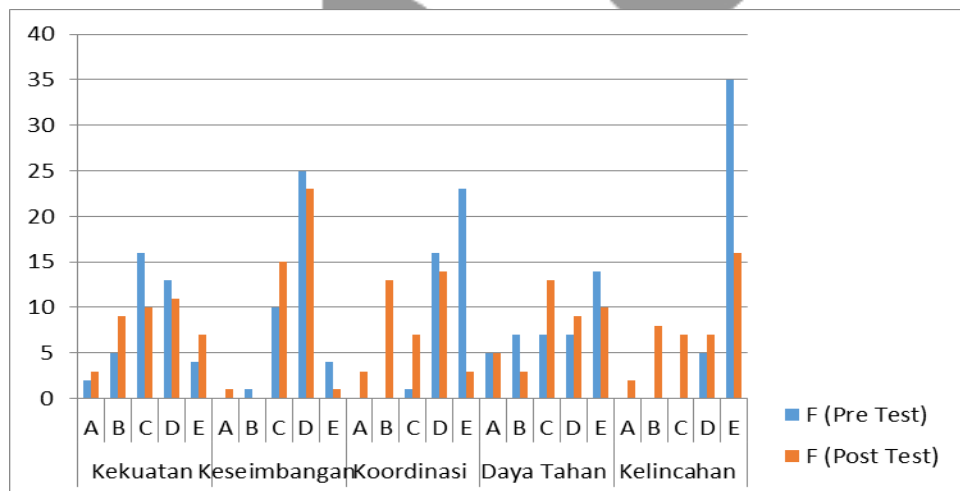
No	Variable	Score	Total of Value	Category	F (Pre Test)	F (Post Test)
1	Strength	5	38	A	2	3
		4	29 – 37	B	5	9
		3	20 – 28	C	16	10
		2	12 – 19	D	13	11
		1	4 – 10	E	4	7
2	Balance	5	>28	A	0	1
		4	23 – 27	B	1	0
		3	7 – 22	C	10	15
		2	03 – 6	D	25	23
		1	0 – 2	E	4	1
3	Coordination	5	17 – 20	A	0	3
		4	13 – 16	B	0	13
		3	9 – 12	C	1	7
		2	5 – 8	D	16	14
		1	0 – 4	E	23	3
4	Endurance	5	60 – 70	A	5	5
		4	49 – 59	B	7	3
		3	39 – 48	C	7	13

		2	28 – 38	D	7	9
		1	0 – 27	E	14	10
5	Agility	5	12,1	A	0	2
		4	12,11 – 13,53	B	0	8
		3	13,54 – 14,96	C	0	7
		2	14,97 – 16,39	D	5	7
		1	16,4	E	35	16

Remarks: A: Excellent, B: Good, C: Moderate, D: Poor, E: Very poor

Traditional games have many benefits for children's growth and development. Traditional games can have cognitive, affective, psychomotor, and social benefits. Egrang as one of the traditional games has a dominant physical element for dynamic balance, because the feet rest on a small footing and had to be able to maintain balance. Beside the balance, Egrang, there were also elements of endurance and muscle strength of the limbs and hands which was used when walking. The last element used was body coordination, where all members of the body such as the eyes, hands and feet in this game, Safari (2015).

Figure 1. Grading chart for each physical activity variable by using Egrang



Strength

Strength is the ability of muscles or muscle groups to produce tension and energy in either static or dynamic conditions. Muscle strength always increased along with the addition of weights and certain exercises. In Egrang, it took strength to be able to stand on stilts, held sticks and walked.

In the game of Egrang, leg muscles and hands was used to be able to play it. The hand muscles (flexor carpi group, extensor digitorum, carpi extensor group, and flexor digitorum) were useful in grasping by gripping the stems, then the biceps brachi muscle to lift. To be able to step it used the leg muscles (achilles tendon, peroneus lobngus, and extensor digitorum longus).

The muscles of the hands and legs that got dominant load in the game of stilts, from the results of the t test had no significant effect. The strength test was conducted with push ups whose movements were different from the stilts. In push-ups there were five muscles which worked, namely pectoralis major, triceps, deltoid, serratus anterior, and coracobrachialis. So it was said that the game of egrang had no effect on increasing strength if the test was conducted with push ups, because the muscles looked different. To test the strength was with pull ups or with barbells, because the biceps muscle worked, or with the grip of the hand. Likewise with leg muscle strength, it was tested by vertical jumping.

Balance

Balance is the ability to maintain a fixed posture when stationary or a certain position permanently. From the results of this study, there was no significant difference between pre-test and post-test because the value was 0.76679 or more than 0.05 based on the t test. On average from the assessment results, there was also not much difference. Figure 1 showed the majority balance category was still in a bad state for the pre test, and the category was quite dominated after the post test.

Not significant differences in pre-test and post-test might not all students had been able to play the egrang well. The balance itself was influenced by two factors namely visual (sense of sight) and vestibular (balance organ in the ear cavity). Balance was divided into two types, namely static balance (body still / not moving) and dynamic (body moving and always changing). In this study, the assessment was carried out statically, while the treatment was carried out dynamically with a egrang game that demanded mobility. The game of egrang which were only taught every hour of sports once a week and the length of research for one month had not been able to provide a significant change. Intensive training was needed so that there was an increase in balance.

Coordination

Coordination is a union of gestures involving the head / eyes, feet and hands. Coordination of motion is very important in the growth and development of children. In coordination will also involve the ability of agility, dexterity, courage, accuracy, and accuracy. School-age children, in general, are experiencing growth in movement coordination, Lutan (2002). In coordination, harmony, rhythm, and sequence of movements of several limbs are needed.

Egrang required coordinating harmonious, rhythmic, and sequential movements of the hands and feet, so that they were used as a medium for training children's coordination. From the results of the study showed a significant difference in the improvement of pre-test and post-test coordination that was equal to 2.46 E-13 far from the value of 0.05. From Figure 1, it was also seen that the post test chart that dominated the category was very good and good. Thus, the game of egrang was proven to improve children's coordination.

Endurance

Endurance is the body's ability to perform for long periods of time. Endurance is closely related to work duration (duration) and work intensity. If the work intensity is getting longer and its activity can be said to have good endurance. Irianto (2016), said endurance is the body's ability to fight fatigue. In general, endurance was divided into two namely, aerobic and anaerobic. Egrang more inclined to the body's endurance which is aerobic, because its performance in a long time and the body requires O₂ in the formation of energy. Egrang is similar to walking people, but by using additional tools.

In the game of egrang there were no significant changes in endurance, because based on the results of the t test, the value was 0.44657 or more than 0.05. To be able to increase endurance required intensive exercise and a long period of time. Egrang was not the case, because this game did not require energy, effort, and speed so it did not trigger an increase in endurance. The heart and lungs did not work optimally, because the play of the egrang did not demand that, neither did the muscular endurance ability. Egrang was dominated by the muscles of the hands and legs, and to do movements with egrang did not require a lot of energy.

Agility

Agility is the body's ability to maintain and control the position of the body when changing direction quickly and accurately during a series of movements. For children who are still in growth and development, agility is very important. Agility for children is useful to support motor activities, especially gross motor skills. Agility is also useful for children to facilitate coordination and make movements with techniques or high levels of difficulty, movements that are efficient, effective, and can easily be oriented to the environment and their barriers.

From the results of research related to an increase in children's agility actually decreased. Changes were significant, but lead negative. Egrang actually reduced the level of agility of children significantly. This decrease occurred because in the game of Egrang did not have movements with high levels of difficulty and maneuverability. When children played Egrang, movements only occurred in straight hands and feet and tended to be stiff. A decrease in agility did not mean that the Egrang were negative, but was modified to increase.

Gross motor skills in agility could be improved to walk fast and change direction quickly in using egrang. Need to modify the trajectory that stimulated the child so that it ran fast and changed direction. By modifying the trajectory and movement it was hoped that children could make fast and accurate movements and maintain and control their body position.

The difference in the mastery of physical activity abilities illustrated that egrang could be considered quite dangerous games, but children actually had the ability to know their capacities and avoided risks that were not yet ready to be taken. Egrang could teach children to exercise endurance, built confidence and train for courage. One way to look at children's abilities with egrang was to see

children play egrang with joy and without compulsion. This was very important, especially in the process of child development, Hasanah (2016). It was hoped that Egrang could become a medium for increasing children's physical activity, especially body coordination.

Conclusion

From the results of this study it was concluded, Egrang could significantly improve children's coordination skills with a significance value of 2.46E-13. Strength, endurance, and balance also increased but not so significantly, while agility decreased. Decrease in agility was caused by egrang which tended to be rigid and there was no maneuvering (difficult), so it was necessary to modify the trajectory and movement to increase agility.

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