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THE EFFECT OF LEVEL LINING SYSTEM TRAINING ON LEAD CLIMBING SCORE ACHIEVEMENT OF MAPALA SUMEDANG MEMBERS

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Natural rock climbing (climbing) and wall climbing (wall climbing) The lead category is one of the groups or classes that compete in wall climbing sports by taking a predetermined route with a certain level of difficulty (grade). The research method uses an experimental method with a pre-experimental design, purposive random sampling data collection with 10 samples taken from mapala members of Sumedang Regency. Data from the experimental and control groups as well as the pretest and posttest show that the Shapiro Wilk sig value is 0.05, so the conclusion from this distribution is that it is normal. It can be concluded that the magnitude of the difference in changes in each group is proven by an increase in the LLS group of 07.20 and the regular training group of 05.60. This training model can be applied as training for beginners. It is recommended for future researchers to use larger samples.

Keywords: Leading, Climbing, Level Lining

Introduction

In some areas there is a strong desire for its citizens to be active and advanced, both intellectually and physically. There are several things you can do, such as participating in sports, to help maintain physical health. Any physical activity that can be done informally or formally is considered exercise. Apart from its main goal of improving and maintaining physical health, sport can function as a form of entertainment. Individuals or groups can participate in various types of sports.

In essence, the terms "sport" and "exercise" have the same meaning: sport is the process of activity and sport is the body. Therefore, the definition of sport is any activity that involves movement of all or part of the body and has a positive effect on a person's health and enjoyment.(Sibuea 2021)

Some of the benefits felt when exercising is that it will prevent various diseases such as stress, obesity, and the worst is stroke. Recently, sport is not only considered as a channel for talents and interests, but many people use sports activities as a job, for example: Gymnastics instructors and swimming coaches. Sport and even achievement are woven into the balance of many outdoor and wilderness adventure sports activities. Trail running, climbing, diving, rafting are among the extreme sports that many people enjoy

Over time, the sport of climbing or rock climbing has become popular with the public and is often done as an opportunity to test adrenaline and is not often done just for recreation. As the sport of rock climbing developed, it eventually underwent modifications with the introduction of climbing boards due to its emergence as a competitive sport at the Olympics and other international meetings. Media is one of the things that differentiates it. Climbers who

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use climbing boards will climb through predetermined points on the board, but rock climbers will use the distorted wall surface of the cracks in the cliff(Sibuea 2021)

Natural rock climbing (climbing) and wall climbing (wall climbing) appear as two different types of rock climbing (artificial rock climbing). Only the climbing media used differentiates these two types of climbing. Rock cliffs that have been formed naturally, not the result of human engineering, are used as climbing materials in rock climbing(Saputra and Henjilito 2022).The sport of wall climbing or better known as wall climbing is an outdoor activity that has sporting values including physical, mental and achievement. Wall climbing is an activity that prioritizes physical strength in order to increase height, technical ability to place your feet or hands at the right point on the surface of the wall, the ability to strategize in determining the path and the ability to think to make quick and correct decisions, and reach a certain height. desired(Rinaldi, Jumain, and Marhadi 2019). Wall climbing requires mental and physical strength. By climbing in a vertical plane upwards on a route overhanging a vertical wall(Salehhodin, Abdullah, and Yusoff 2018). Strength is one of the dominant elements of the physical condition components required by rock climbing athletes. “Strength is the ability of a person's muscles or group of muscles to withstand or accept a workload(Hardiyono and Nurkadri 2018)

Wall climbing is an extreme sports activity and has elements of sport, including physical, mental and achievement.(Tarigan 2017)said that: "wall climbing is a technique used for climbing walls by utilizing holes on the surface of the wall and gaps in the rock and is one of the many ways to reach the top"

Category Activities in wall climbing there are several categories:

a. Lead (Runner): climbing is done with the climber attaching a safety point when climbing. Progression along the path axis determines the climber's ranking.(Yahya 2016)In rock climbing, a safety device is used where a rope is attached to it to protect it from falling.
b. Boulder: bouldering is done without using a safety rope. Usually boulder routes are short and have lots of points. This activity is carried out on a wall at a height of no more than 5 meters from the ground. Ropeless climbing is done without ropes and is equipped with a landing mat for safety.(FPTI 2014)
c. Speed: climbing carried out with a safety rope attached to the top rope. with With the time to complete the climbing route to determine the climbing level(FPTI 2014).

The value of a hold (hold) will be determined by the Chief Routesetter before a competition round begins, which is marked on the topo sketch of the climbing route used by the Category Judge(FPTI 2014). The score obtained is the result of the person who successfully completed the climb to the last (top) point. In other words, someone with high physical abilities may be able to complete the exercise up to (top) with precise point accuracy in a faster time.

The lead category is one of the groups or classes that compete in the sport of wall climbing by taking a predetermined route with a certain level of difficulty (grade). The winner is determined based on the height achieved. The climbing technique in this category uses a leading system secured (belay) from below and the climber is required to attach the safety rope to the hook ring on the runner every time he passes the runner along the route. Seeing the severity of this lead category, you need to be in good physical condition(Hardiyono, Pratama, and Laksana 2019).

This is of course related to his role and duties as a trainer in order to provide appropriate training programs. "Training is a process of carrying out sports activities that are planned systematically and structured over a long period of time as an effort to improve athletes' abilities

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in an effort to achieve the highest performance, especially carried out in preparation for a competition." In other words, training is defined as "training is the process of carrying out sports activities carried out on the basis of a training program that has been prepared, aimed at improving the athlete's ability in an effort to achieve goals.(Chan 2012)

According to(Hardiyono 2019)A wall climber's arms move due to muscles and bones; Muscles are active means of movement and bones are passive means of movement. Muscle strength is the ability of muscles to produce tension against a resistance. Meanwhile, the arm is the part of the body that stretches from the wrist to the human shoulder which functions to hold an object. Coming back to sports performance, every coach has to be aware of many things.

Therefore (Hardiyono 2018)states that strength is a component of a person's physical condition regarding his ability to use muscles to accept loads while working. Physical conditioning training is an activity that a person does to improve or maintain body fitness. Strength is one of the factors that determines performance in climbing and includes the arm muscles(Balaghi, Sarshin, and Bahari 2014). This is related to a systematic and training process that is carried out repeatedly by increasing the amount of training load and training intensity day by day.(Hermawan et al. 2021).

Success is always linked to the goals of an activity. The goal of wall climbing is to complete the climb with the correct technique, good physical and mental strength. Therefore, climbing success is identified with completing the climb to the final point using the athlete's ability to climb the wall.(Hardiyono 2018).

Based on the opinion above, physical training is one of the main components in leading training in wall climbing, one of which is arm muscle strength training with various types of training, one of which is level lining system training on an inclined plane. This exercise is a modified exercise of the Pul Up exercise where the Pull up exercise with a slope of 45°-65° aims to train arm muscle endurance. So does this exercise have an impact on the achievements of the leading mapala members of Sumedang district?

The sport of rock climbing has many purposes, being a recreational sport, an Olympic/performance sport, and a training sport(MacKenzie et al. 2020). Previous research has identified many training characteristics in rock climbing, such as upper body and shoulder strength including forearm grip strength and finger strength, part body endurance capacity. And there are lots of training methods that are practiced in various methods. And here I made a modified exercise. Is there a significant influence between Level Lining System Training and Lead Climbing Achievements, is there a difference in Lead Climbing Score Achievements that are treated using Level Lining System Training and those given regular training and what are the differences in Lead Climbing Score Achievements that are applied? by researchers with Level Lining System Training and Regular Training.

Method

The method in this research is an experimental research method (Experimental Research). Experimental research is research used to find the effect of certain treatments on others under controlled conditions. The form of experimental design used in this research is Pre-Experimental Design.(Sugiyono 2013).

This research was conducted at Graha Insun Medal in the Sumedang district with students who love nature in Sumedang district. By taking samples using a purposive random sampling technique because this technique adapts to the criteria to be studied. Samples were taken from 10 people from mapala in Sumedang Regency who often use Graha Insun Medal Sumedang as a climbing practice place. Sampling was divided into 2 groups, each group

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consisting of 5 people. Group 1 was given treatment in the form of level lining system training before climbing periodically and group 2 was given no treatment before climbing.

With experimental instruments, namely Level Lining System Exercises with various heights and assessment of lead achievements using standard standards in the book(FPTI 2014). Only hand support will be awarded points. In accordance with what has been determined, the support that is held has a higher value than the support that is touched:

a. The support that is held will be given the height of the support without marking.
b. A support that is touched without being held will be given the height of the support with a minus sign (-).
c. The support is held and then a climbing movement is carried out with the aim of increasing the height of the support held and a plus sign (+).
d. It is the Category Judge's authority to determine the benchmark value achieved by an athlete.

If it touches a support other than the one specified, this support is not considered to be the maximum height (in the case of a traverse or roof section of the track, the furthest distance) reached. Only parts that can be used for climbing will be assessed to determine the results achieved by the athlete(FPTI 2014). Determining the athlete's score uses modified rules which use the calculation of the points held and the runner's calculation that has been achieved with the estimated time.

Discussion

The description of the results of this research discusses the maximum value, minimum value, mean, median, mode and standard deviation of the results of the Level Lining System exercise. The test results will be recorded and calculated for each group. Here the results of the two will be analyzed based on research data using the IBM SPSS for Windows 20 program, then the description of the research data can be explained further in table form as follows:

Level Lining System Training Results and Regular Training:

Table 1. Description of Level Lining System Training Results and Regular Training.

	Pre-Experiment	Post-Experiment	Pre-Control	Post-Control
Maximum Value	5	12	17	21
Minimum Value	2	9	13	19
Mean	3.20	10.40	14.60	20.20
Median	3.00	10.00	14.00	21.00
Mode	2	9	13	21
Standard Deviation	1,304	1,517	1,817	1,095

a. Based on the table, it can be concluded that the pretest using the level lining system training method got a maximum score of 5 and those who did the exercise could get a maximum result of 17 and the results of the post test using the level lining system training method got a maximum score of 12 and those who did regular training got a maximum result of 21 .

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b. Based on the table, it can be concluded that the pretest using the level lining system training method got a minimum score of 2 and those who did normal training got a minimum result of 13 and the posttest results using the level lining system training method got a minimum score of 9 and those who did regular training got a minimum result of 19.
c. Based on the table, it can be concluded that the pretest using the level lining system training method got a mean of 3.20 and those who did regular training got a mean of 14.60 and the posttest results using the level lining system training method got a mean of 10.40 and those who did regular training got a mean result of 20.20.
d. Based on the table, it can be concluded that the pretest using the level lining system training method got a median of 3.00 and those who did regular training got a median of 14.00 and the posttest results using the level lining system training method got a median of 10.00 and those who did regular training got a median of 21.00.
e. Based on the table, it can be concluded that the pretest using the level lining system training method got mode 2 and those who did normal training got mode 13 and the results of the posttest using the level lining system training method got mode 9 and those who did normal training got mode 21.
f. Based on the table, it can be concluded that the pretest using the level lining system training method obtained a standard deviation of 1.304 and those who did the exercise could get a standard deviation of 1.817 and the results of the posttest using the level lining system training method got a standard deviation of 1.517 and those who did the exercise could get a standard deviation of 1.095.

Table 2. Normality test

		Kolmogorov-Smirnova			Shapiro-Wilk		
	Regular Practice	Statistics	df	Sig.	Statistics	df	Sig.
Level Lining System	Pre-Experiment	,221	5	,200*	,902	5	,421
	Post-Experiment	,254	5	,200*	,803	5	,086
	Pre-Control	,229	5	,200*	,867	5	,254
	Post-Control	,367	5	.026	,684	5	,006

Based on the table above, for all experimental and control group data as well as pretest and posttest, it shows that the Kolmogorov Smirnov and Shapiro Wilk sig values are > 0.05, so the conclusion from this distribution is that it is normal. Because the research data is normally distributed, the research can be continued using parametric statistics, namely: simple paired t test, homogeneity test and independent sample t test.

Table 3. Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	PreExperiment - PostExperiment	-7,200	1,095	,490	-8,560	-5,840	-14,697	4	,000
Pair 2	PreControl - PostControl	-5,600	1,140	,510	-7,016	-4,184	-10,983	4	,000

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a. Based on the output of Pair 1, the sig value is obtained. (2 tailed) of 0.000 < 0.05, it can be concluded that there is a difference in the achievement of Leading Score for the experimental class pre-test and the experimental post-test (Level Lining System Training)
b. Based on the output of Pair 2, the sig value is obtained. (2 tailed) of 0.000 < 0.05, it can be concluded that there is a difference in the achievement of Leading Score for the control class pre-test and control class post-test (Ordinary Practice)

There is a significant influence before carrying out (pretest) Level Lining System training on the achievement of lead climbing scores and after carrying out (posttest) Ordinary Training.

Table 4. Test of Homogeneity of Variance

		Levene Statistics	df1	df2	Sig.
Level Lining System	Based on Mean	1,707	1	8	,228
	Based on Median	,421	1	8	,535
	Based on Median and with adjusted df	,421	1	7,482	,536
	Based on trimmed mean	1,630	1	8	,238

Based on the table above, the Based on Mean sig value is 0.228 > 0.05, so it can be concluded that the variance of the Experimental Posttest and Control Posttest class data is the same or homogeneous, thus, one of the conditions (not absolute) of the independent sample t test has been fulfilled.

Table 5. Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Level Lining System	Equal variances assumed	1,707	,228	-11,713	8	,000	-9,800	,837	-11,729	-7,871
	Equal variances not assumed			-11,713	7,281	,000	-9,800	,837	-11,763	-7,837

Based on the table above, the sig value is obtained. (2 tailed) is 0.000 < 0.05, so it can be concluded that there is a difference in the results of training using the Level Lining System with Ordinary Training.

Conclusion

Based on the research results, it can be concluded that there are differences in test results from
both groups. This can be seen from the difference in the average score of the pre-test being lower than the post-test. This means that providing Level Lining System training has an influence on Lead Climbing Score Achievement. The magnitude of the difference in changes in each group is proven by an increase in the LLS group of 07.20 and the regular training group of 05.60. This training model can be applied as training for beginners. It is recommended for future researchers to use larger samples.

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