



The Effectiveness of Speed Chute and Light Sled Training on the Speed of PS Sakra Junior Football Players in 2023

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Abstract

Objectives: Speed is an essential physical component in football performance, as it supports players in responding quickly, accelerating, and competing effectively during matches. This study aimed to determine the effect of speed chute and light sled training on improving the speed of PS Sakra Junior football players in 2023.

Materials and Methods: This study employed an experimental method using a one-group pretest–posttest design. The population consisted of 20 PS Sakra Junior football players, and all participants were included in the study using a total sampling technique. Data were collected through speed performance tests conducted before and after the training intervention. The obtained data were analyzed using the t-test to determine the significance of the training effect.

Results: The findings showed that speed chute and light sled training had a positive effect on players' speed improvement. The statistical analysis indicated that the calculated t-value was higher than the t-table value, showing a significant difference between pretest and posttest results. The speed chute training result showed a t-value of 6.309, while the comparison value exceeded the critical value of 5.155, indicating that the training intervention significantly improved the speed performance of PS Sakra Junior players.

Conclusions: Speed chute and light sled training were effective in improving the speed of PS Sakra Junior football players in 2023. These training methods can be considered practical alternatives for developing speed performance in young football players.

Keywords: Speed Chute; Light Sled Training; Sprint Speed; Football Players; Training Effectiveness.

INTRODUCTION

Football is a sport that is often found in both rural and urban areas. (Valentino & Iskandar, 2020). Each player has a unique role in the team, so good cooperation between team members is very important (Azis et al., 2020). Football is a team game played by 11 players, including a goalkeeper, in each team.

The goal of the sport is for each team to score as many goals as possible and to prevent their opponents from scoring. (YUDISTIRA et al., 2018) .

Football is a game by kicking a ball that is contested by players from two different teams by putting the ball into the opponent's goal, Football is a very popular game and is loved by all levels of society from children, adults to the elderly, The characteristics of the game of football itself are very simple, easy to do whenever and wherever people like, and without having to spend a lot of money. Other characteristics found in the game of football are the movements of running, jumping, kicking, stopping, dribbling, and catching the ball for the goalkeeper (Manurung, 2021) . Each player has a unique role in the team, so good cooperation between team members is very important (Azis et al., 2020). Football players also want to achieve high levels of performance. Therefore, to improve their performance, these basic techniques are closely related to movement quality, physical condition, technique, tactics, and mentality. Players must first master basic football techniques, including kicking, shooting, heading, controlling, and off-the-ball movement.

One of the skills in soccer is running, but running isn't just about running. Running is used to get past defenders and chase down opponents. It's also used to find space for attacks. Therefore, running is essential in soccer, especially in relation to speed. One way to achieve this is through training. Training is the effort to improve sports skills (proficiency) using various equipment according to your goals and needs. (Susanto & Lismadiana, 2016) . *Speedchutes* and *light sleds* with fixed and increasing loads are one system for increasing an athlete's speed. Speedchutes with fixed and increasing loads are a training system that can improve an athlete's agility. Therefore, this training method can be used and applied to improve agility in players (Najmudin et al., 2021) .

Football is a sport that requires high physical abilities due to its complex movements (all body parts carry out movements or activities) such as running, kicking, heading, etc., so that it demands work from various systems related to the physical being heavier.

(Fauzan, 2015) explains that training is the realization or implementation of material from previously planned training forms. This realization of material or training forms is carried out repeatedly and with increasingly difficult demands in order to improve physical performance abilities.

According to (Dermawan, 2019) explains that "Training periodization is a training and competition plan that is structured in such a way that peak performance is achieved at a predetermined/pre-planned time." This gives us an initial understanding that, if we want to achieve, systematic training is needed that can support the predetermined target.

According to (Nusufi, 2016) In soccer, speed is an essential physical component. Speed is a determining factor in the sport. A player's ability to perform similar movements consecutively in the shortest possible time.

Speed is the ability to move at the fastest possible speed. From a motor system perspective, speed is the basic mobility of the central nervous system and muscular apparatus to perform movements at a specific rate. From a mechanical perspective, speed is expressed as the ratio of distance to time (Bompa, 1990).

Speed is also the ability to move from one place to another in the shortest possible time (Kristinawati et al., 2019). High speed can enable a player to cover a distance in the shortest possible time (Satriya et al., 2014). Speed *must* be carried out with continuous movements, in the same form in the shortest possible time (Pelamonia & Harmono, 2018). Speed is a combination of three elements, namely reaction time, movement frequency, movement frequency per unit of time, and speed of covering a distance.

Speed is one of the important biomotor abilities for performing sports activities (Neviantoko et al., 2020). According to Jonath et al (1997), in human movement, mass is the body or one of the body parts and power is the muscle strength used by a person according to the mass moved.

According to Wiguna (2017: 180), *light sledging exercises* aim to develop running strength and power, as well as increase leg stride frequency. *Light sledging exercises* can be performed by running or sprinting while pulling a weight, such as a car tire, etc.

Light sled training is a method that can improve running speed in soccer players. This training focuses on strengthening strength and endurance while increasing stride frequency (Anwar et al., 2021). This practice involves running or sprinting while pulling a weight.

Speedchute is a tool that has a function to create maximum acceleration aimed at increasing speed, how it works is to do progressive resistance and do speed training with a better distance. This parachute method was discovered by Tabachnik (Martinopoulou, 2011:19) which he said was ideal for improving in all areas of speed phase. The parachute training method helps ensure increased endurance with running speed without changing technique. Parachutes are also indicated for all sports with some changes in motion as opposed to sleds that can be utilized in one-way sports.

Based on the results of observations made by researchers and according to the coach, there are still many PS Sakre Junior players who have difficulty breaking away from the opponent's guard who is pressing them and have difficulty getting past the opponent when controlling the ball, from several observations made during the PS Sakre Junior training schedule, it can be seen that the serious problems that exist in PS Sakre Junior are in speed, acceleration, and reaction to the ball. Therefore, special treatment is needed to increase the speed of soccer players at PS Sakre Junior.

METHOD

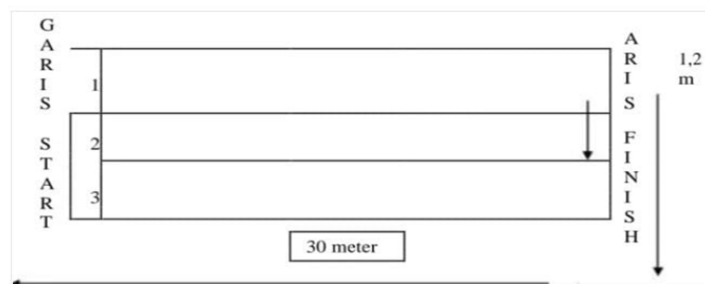
This study uses a quantitative method with an experimental design approach. This type of research is a *quasi-experiment using a non-equivalent control group design*.

According to Sugiyono, in (Ardila et al., 2020) *non-equivalent control group design* There is an experimental group that functions as a comparison group and there is an opportunity to obtain *pre-test* and *post-test measurements* from individuals in two groups, the experimental group and the control group.

Non-equivalent Control Group Design The population and sample in this study Population Sugiyono (2013: 117) population is a generalization area consisting of objects/subjects that have certain qualities and characteristics

determined by the researcher to be studied and then conclusions drawn. The population in the study was 40 people.

Sugiyono (2013 :118) sample is part of the number and characteristics possessed by the population. The sample in this study was 20 people. According to Jhonson and Larry (2014:364) *purposive sampling* is a non-random sampling technique where researchers determine samples according to certain characteristics. In sampling, researchers use *purposive sampling* , namely taking sample members or subjects based on certain characteristics or traits. Research Instrument In this study, the method used is the 30-meter sprint test method, the steps for conducting the test are: Making a sprint track with a distance of 30 meters using cones, The test track is in the form of a straight line, The cones are placed at the start line and the finish line, Each sample gets 2 attempts, When the whistle sounds the sample runs from the start line to the finish line.



Picture 1.1 30 meter running track

(Source: Ismayarti 2008:58 7)

RESULTS AND DISCUSSION

Table 6.1

Normality Test

One-Sample Kolmogorov-Smirnov Test

	pretest
N	20
Normal parameters a,b Mean	5.5665
Std. Division	,49176
Most extreme Absolute	,220
Positive Differences	220
Negative	-,125
Kolmogorov-Smirnov Z	,984
Asymp. Sig. (2-tailed)	,287

- a. Test distribution is Normal
- b. Calculated from data

From table 6.1 above, it can be seen that the Kolmogorov-Smirnov value is 984 and is significant at 0.820. Because $p = 287 > 0.5$, it can be concluded that the residual for the variable data on increasing *speed chute* and *light sleed* training .

Table 6.2
Homogeneity Test s
Pretest

Levene			
Statistic			
s	df1	df2	Sig.
,734	2	.7	.456

A Test of homogeneity of variances cannot be performed for pretest because the sum of case weights is less than the number of groups .

Based on table 6.2 above, it can be seen that the sig value is $.456 > 0.05$, so it can be concluded that the data is homogeneously distributed.

Table 6.3
T-Test Results
Paired Samples Test

Paired Differences								
	Mean	Standard deviation	Std. Error Mean	95% Confidence Interval Of The Difference		t	df	Sig.(2-tailed)
				Lower	Upper			
Pair1 pretest-posttest	,94300	,48235	,10786	,71725	1.16875	8,743	19	,000

Based on the results of data analysis in table 6.3 , it is known that the sig. value (2-tailed) < 0.05 is $0.000 < 0.05$, this shows that there is a difference in training. *speed chute* and *light sleed* in the *pretest* and *posttest* data , which means there is an effect of training *speed chute* and *light sleed* towards increasing PS Sakre Junior training in 2023 .

This study aims to determine the effectiveness of *speedchute training* and *light sled training* on the speed of PS Sakre Junior 2023 soccer players . The results of the study were obtained based on *the pretest and posttest results of speedchute* and *light sled training data* .

The results of data processing show that the results of *the speedchute training* = 6.309 and *the light sled training* = 1.235 , meaning that there was an increase in the results of *the speedchute training* , while *the light sled training* showed less improvement when viewed from the t-value test.

The results of this study reinforce the assumption that using *speedchute training* can improve speed in soccer, while *light sledging* is less effective . An athlete's ability to train with appropriate repetitions and sets is essential for high performance.

Apart from the training method given to increase speed, there are several other factors that can also determine the results, such as the difference in the diameter of the *speedchute training tool* with the weight of *the light sled training tool* and also the arrangement of rest and diet patterns. For this reason, the possibility of increasing speed will be better and maximized if the rest and rest patterns are arranged as well as well. There are also many other very prominent improvements from *speedchute training*, *such as increased power and more accurate speed*, while *light sled training* has less improvement in soccer training.

Of the two methods, *speedchute Training* is the process by which an athlete prepares for peak performance. The goal of training is to improve an athlete's abilities and work on their capacity to optimize performance. A speedchute is a piece of sports equipment that allows for maximizing acceleration and final speed through progressive resistance and training at higher speeds. Resistance allows for improved stride length and frequency. The goal of speedchute training is to increase running strength and power, improve stride length, and increase the length of the initial and return strides.

At high speeds, initial speed and transition to top speed increase. Speed is a biomotor component required in every sport. Speed is a combination of leg swing length and number of steps. Speed is influenced by the movement technique used, so the function of technique is to increase the frequency of movement and accelerate reaction time. Sprinting is a run in which athletes must cover a distance at maximum speed. A 60m sprint is a run that is attempted or done as quickly as possible (maximum speed) from start to finish in the shortest time possible to cover a distance of 60m using maximum speed. Meanwhile, *Light sledging* exercises aim to build running strength and power and increase leg stride frequency. *Light sledging exercises* involve running or sprinting while pulling a weight, such as a car tire or a relatively heavy load.

Based on the research results of *speedchute training* and *light sled training* to improve weight training for PS Sakre junior soccer players 2023 in the study there were two groups, group 1 and group 2, each of which took one method, namely *speedchute* and *light sled* , which would affect the spirit of motivation, different creativity so that it could provide different effects or influences.

Therefore, the groups given *the speedchute* and *light sled training methods* had different effects on increasing speed. This indicates that there is an influence between *the speedchute* and *light sled methods* .

Light sled training also has a fairly efficient effect, where the training method requires energy to be used, coincidentally the training method is quite heavy, pulling or carrying a car tire repeatedly, so the training has its own effect.

CONCLUSION

The conclusion of this study is. From the results of the data analysis above, it can be concluded that the value of 6.309 *speedchute training* is effective in increasing the speed of PS Sakre Junior 2023 soccer players . The results of the data analysis above, it can be concluded that the value of 1.235 *light sled training* is less effective in increasing the speed of PS Sakre Junior 2023 soccer players . The results of the data analysis above, it can be concluded that there is a difference in *speedchute training* with a value of 6.309 while *light sled* training with a value of 1.235 to increase the speed of PS Sakre Junior 2023 soccer players . The results of data processing show that the results of *speedchute training* = 6.309 and *light sled* = 1.235, meaning that there is an increase in the results of *speedchute training* and the ineffectiveness of *light sled training* to increase speed in soccer games. From the results of this study, it can strengthen the assumption that using *speedchute training* is one form of training that can increase speed in soccer games.

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