

The Effect Of Repeated Sprint Training On Vo2max And Dribbling Skills In Sesela FC Football Players

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Abstract

Objectives: This study aimed to determine the effect of Repeated Sprint Training (RST) on VO2Max and dribbling skills in Sesela FC football players.

Materials and Methods: This study used a pre-experimental method with a one-group pretest–posttest design. The participants were 20 Sesela FC football players selected using total sampling. The training intervention consisted of repeated sprint exercises performed on a 20-meter track, with seven maximal sprint repetitions and 25 seconds of recovery between sprints. VO2Max was measured using the Multistage Fitness Test, while dribbling skills were measured using a football dribbling test. Data were analyzed using a paired sample t-test to compare pretest and posttest scores.

Results: The results showed that Repeated Sprint Training significantly improved VO2Max and dribbling skills. After the training intervention, players demonstrated better aerobic capacity and faster dribbling test completion times. Statistical analysis showed significant differences between pretest and posttest results, with p-values less than 0.05 for both variables.

Conclusions: Repeated Sprint Training is an effective training method for improving both VO2Max and dribbling skills in football players. This training method can be integrated into regular football training programs because it simultaneously develops physical endurance, sprint ability, speed, agility, and ball control.

Keywords: repeated sprint training, VO2Max, dribbling skills, football, physical performance

Introduction

Football is a global sport that requires a combination of technical, tactical, physical, and psychological abilities. (Kuswoyo, 2017; Kuswoyo, Wasa, et al., 2020; Raya-Castellano & Uriondo., 2015) Players must be able to perform various movement patterns, including sprinting, changing direction, passing, shooting, and dribbling, throughout the match. Among these components, VO2Max and dribbling skills are essential because they support both physical endurance and technical performance during high-intensity play(Kuswoyo, Lahinda, et al., 2020).

VO2Max is an important indicator of aerobic capacity. In football, a good VO2Max allows players to maintain performance across 90 minutes, recover more quickly between high-intensity actions, and remain effective during repeated sprint situations. Players with better aerobic capacity are generally better able to tolerate match demands, especially during transitions, pressing, and counterattacks.



Dribbling is also one of the most important technical skills in football. It allows players to control the ball while moving, pass opponents, create attacking opportunities, and maintain possession under pressure. Effective dribbling requires speed, agility, coordination, balance, and ball control. Therefore, training programs should not only focus on technical drills but also integrate physical conditioning that supports technical execution (Gunawan & Mahfud, 2022; Susworo Dwi Marhaendro et al., 2023).

Based on observations at Sesela FC, several players showed weaknesses in physical endurance and dribbling performance. These problems were indicated by reduced stamina during high-intensity play and less effective ball control when moving at speed. This condition required a training method that could improve both physical and technical components at the same time.

Repeated Sprint Training (RST) is one training method that is suitable for football because it reflects the intermittent nature of the game. RST involves repeated maximal or near-maximal sprint efforts separated by short recovery periods. (Pyne & Sharp, 2014; Santos et al., 2024) explained that high-intensity interval methods, including repeated sprint formats, can improve aerobic and anaerobic adaptations in athletes. also found that sprint interval training improved fitness and repeated sprint performance in young football players.

In addition to improving physical capacity, repeated sprint-based training may also support technical performance. emphasized that high-intensity training loads are closely related to football performance because players must repeatedly perform technical actions under fatigue. also reported that football-based conditioning programs could improve aerobic capacity and dribbling performance. Therefore, this study aimed to examine the effect of Repeated Sprint Training on VO2Max and dribbling skills in Sesela FC football players (Caetano et al., 2015; Micheo et al., 2012; Roth et al., 2021).

Materials and Methods

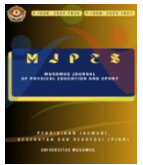
Study Participants

(Sugiyono, 2012) The participants in this study were 20 football players from Sesela FC. The sampling technique used was total sampling, meaning that all players in the population were included as research participants.

Study Organization

This study used a pre-experimental method with a one-group pretest–posttest design. The study began with an initial test to measure VO2Max and dribbling skills. After the pretest, the players participated in a Repeated Sprint Training intervention. At the end of the training program, all players completed the same posttest.

The RST intervention was carried out using repeated 20-meter sprints. Each player performed



seven sprint repetitions at maximum speed, with 25 seconds of rest between each sprint. Before the main session, the players performed a 10-minute warm-up to prepare the body and reduce injury risk.

Instruments

VO2Max was measured using the Multistage Fitness Test, commonly known as the Bleep Test. This test required players to run back and forth over a 20-meter distance according to an audio signal with progressively increasing speed.

Dribbling skills were measured using a football dribbling test. Players were asked to dribble the ball through a predetermined course with obstacles. The time needed to complete the test was recorded as the dribbling performance score.

Statistical Analysis

Data were analyzed using a paired sample t-test. This test was used to compare pretest and posttest results for VO2Max and dribbling skills. The significance level was set at $p < 0.05$. The results were presented in tables and explained narratively.

Results

VO2Max

The results showed that VO2Max improved after the Repeated Sprint Training intervention. The improvement indicates that players developed better aerobic capacity after participating in repeated high-intensity sprint training.

Table 1. VO2Max Pretest and Posttest Results

Variable	Pretest	Posttest	Interpretation
VO2Max	Increased after treatment	Higher than pretest	Improved

The paired sample t-test showed a significant difference between pretest and posttest VO2Max scores, with $p < 0.05$. This means that Repeated Sprint Training had a significant effect on improving VO2Max.

Dribbling Skills

The results also showed that dribbling performance improved after the RST intervention. Players completed the dribbling test faster after the training program, indicating better speed, agility, and ball control.

Table 2. Dribbling Skills Pretest and Posttest Results

Variable	Pretest	Posttest	Interpretation
Dribbling Skills	Slower completion time	Faster completion time	Improved



The paired sample t-test showed a significant difference between pretest and posttest dribbling scores, with $p < 0.05$. This means that Repeated Sprint Training significantly improved dribbling skills.

Summary of Statistical Results

Table 3. Summary of the Effect of Repeated Sprint Training

Variable	Statistical Result	Interpretation
VO2Max	$p < 0.05$	Significant improvement
Dribbling Skills	$p < 0.05$	Significant improvement

Overall, the results indicate that Repeated Sprint Training significantly improved both VO2Max and dribbling skills in Sesela FC football players.

Discussion

The findings of this study show that Repeated Sprint Training significantly improved VO2Max among Sesela FC football players. This improvement can be explained by the physiological characteristics of RST, which combines maximal sprint efforts with short recovery periods. This type of training stimulates both aerobic and anaerobic energy systems. Buchheit and Laursen (2013) stated that high-intensity interval training can improve cardiovascular and metabolic adaptations, including oxygen uptake and recovery capacity. Similarly, Laursen (2019) emphasized that high-intensity interval training is effective for improving endurance performance when training intensity, recovery, and volume are properly arranged.

The increase in VO2Max is important for football players because the game requires continuous movement and repeated high-intensity actions. A higher VO2Max allows players to recover faster between sprints, maintain intensity during the match, and reduce fatigue. Meckel et al. (2009) found that long sprint interval training improved repeated sprint performance and fitness levels in young football players, which supports the present finding that RST can develop football-specific endurance.

The improvement in dribbling skills after RST also indicates that repeated sprint training can support technical performance. Dribbling requires speed, coordination, agility, and ball control. Although RST is mainly a physical conditioning method, improved sprint capacity and lower-limb power may help players move faster and control the ball more effectively during dribbling tasks. Akmal and Lesmana (2019) reported that speed and agility contribute to dribbling ability, while Ardianda (2018) found that agility-based running exercises improved football dribbling performance.

The present findings are also supported by Rizki (2019), who reported that football training programs could improve both maximal aerobic capacity and dribbling skills. This suggests that physical conditioning and technical performance are closely related in football. When players have better



endurance and speed, they are more able to maintain technical quality even under fatigue.

From a practical perspective, the results of this study indicate that RST can be used as an efficient training method because it improves physical and technical components simultaneously. This is especially useful for football clubs with limited training time. However, coaches must carefully control training load, recovery time, and athlete readiness because RST is a high-intensity method. Without proper supervision, excessive sprint training may increase the risk of fatigue and injury.

Despite its positive findings, this study has several limitations. The study used a one-group pretest–posttest design without a control group, so external factors could not be fully controlled. The sample was also limited to 20 players from one football club. Future studies are recommended to use a control group, involve larger samples, and examine other performance variables such as agility, repeated sprint ability, tactical decision-making, and match performance.

Conclusions

Repeated Sprint Training significantly improved VO₂Max and dribbling skills in Sesela FC football players. The improvement in VO₂Max indicates better aerobic capacity and recovery ability, while the improvement in dribbling skills reflects better speed, agility, coordination, and ball control. Therefore, RST can be recommended as an effective training method for football coaches who aim to improve physical endurance and technical performance simultaneously.

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