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Exercises for wrist flexibility, arm power, concentration and shooting results on petanque

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Abstract

The aims of this study were: 1) To analyze the effect of wrist flexibility exercise on shooting results; 2) To analyze the impact of arm power training on shooting results; 3) To investigate the effect of concentration training on shooting results; 4) To examine the impact of wrist flexibility exercise, arm power and exercise. Concentration on the results of shooting petanque. This study uses a pre-experimental method with the "One Group Pretest Posttest Design" research design. The instrument used to test the shooting ability is the number game shooting station 1, 2, 3, 4, and 5 with a distance of 6 meters. The subjects in this study were petanque athletes in Indragiri Hulu Regency, totalling 18 sons, using purposive sampling. The results of this study: 1) There is an effect of wrist flexibility exercises on the results of shooting petanque. 2) There is an effect of arm power training on the results of shooting petanque. 3) There is an effect of concentration training on the results of shooting petanque. 4) There are similarities between the results of wrist flexibility exercises, arm power, and concentration and without concentration on the shooting results of petanque athletes in the Indragiti upstream district. Based on the results of the study, it can be concluded that there is a significant effect between wrist flexibility, arm power, and concentration on shooting results in petanque athletes in Indragiri Hulu Regency, based on the T-test simultaneously. This means that Wrist Flexibility, Arm Power, and Concentration are very influential in petanque sports.

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INTRODUCTION

Petanque is a form of boules game where the goal is to throw an iron ball as close as possible to a wooden ball called a cochonnet (jake), and the feet must be in a small circle. Lara, (2020). This game is usually played on hard ground but can also be played on grass, sand or other ground surfaces (Eko Cahyono & Nurkholis, 2018). The character of the petanque sport tends to require accuracy. Anyone who wants to play petanque, regardless of age, position, or gender, can play this sport (Gracia Sinaga, 2019). improve sports performance (Febrianto et al., 2022).

Several numbers are contested in the petanque sport, such as men's and women's triples, men's and women's doubles, men's and women's singles, and men's and women's shooting (Kurdi et al., 2020). For the shooting competition, numbers are carried out at a distance of six meters, seven meters, eight meters and nine meters with points that can be obtained 0 points, 1 point, 3 points and 5 points for each successful shooting. Shooters can only shoot once for each given disciplinary distance (Nurfatoni & Hanief, 2020).

Game techniques in petanque sport have two throwing techniques. The first technique is pointing. The pointing technique is an attempt by a person or team to deliver the ball to approach the target. In doing the pointing technique itself, has two ways, standing and squatting. The second technique is shooting (Chandra Triadi, 2021). The shooting technique is an effort made by a person or team to keep the opponent's ball away from the target. The shooting technique can also be done by standing and squatting (Sukawi et al., 2021).

Based on the objective of the main mechanics, the petanque game is included in a sport that aims to achieve maximum accuracy (Agustina & Priambodo, 2017). This means that the throw must be right on a specific target to get the winning point. The essential skill that every petanque player must have is shooting because the game aims to get the ball closer to the target ball, keep the opponent's ball as far away as possible, and prevent the opponent from stealing the score (Gracia Sinaga, 2019).

The initial study's results found that the achievements of the petanque athletes in Indragiri Hulu Regency still needed to show the expected results. This is known based on observations of the FOPI management of Indragiri Hulu Regency, from the results of the championship data obtained at the 2018 National Student Sports Week and the 2019 National Championship athletes still have not received any achievements, especially in shooting numbers. From the results of the observations above, the researchers concluded that the achievements of the petanque athletes in the Indragiri Hulu Regency had remained the same. It can be seen from the results of the championships that have been participated in that the desired achievement results have yet to be found.

Many factors are thought to cause the not-yet-optimal achievement in the Petanque sport in Indragiri Hulu Regency, including the components of the physical condition that exist in all sports, including strength, speed, endurance, and agility. , flexibility, and coordination (Cahyono et al., 2018). Petanque sport has components of physical conditions, according to (Yulingga & Ardhi, 2019), including height, arm length, palm length, muscle strength Arms, wrist flexibility, balance, arm muscle power, hand squeeze strength, hand-eye concentration and coordination (Arisman et al., 2018). Of the many factors and elements of the physical component, it is suspected that wrist flexibility and arm power have a role in mastering shooting techniques in athletes' petanque, Indragiri Hulu Regency.

Shooting in the petanque game does not need a long description. Aim at the target ball (focus on the point of the target ball, not the ball trap), try to land the ball on the target ball and push it off the field. (Pelana, 2016), Shooting is a throw to expel opponent bosses from the Boka target. The shooting types are: shot on iron, shooting right at the opponent's body without touching the ground first. Short Shot shoots the opponent's bosses by touching the ground about 20-30 cm from the opponent's bosses. A ground shot shoots an opponent's hole by touching the ground about 3 or 4 meters and rolling about the opponent's hole (Nikmah, 2020).

To be able to shoot in the expected petanque game, special skills are needed, for example, the speed of arm movement when throwing bosi. For this reason, swing and arm strength are needed so that the boi can go fast when the boi is thrown by Setiawan (2020). Success in throwing shooting is determined by many aspects (Iskandar & Rahman, 2019). Three kinds of equipment need to be owned to achieve maximum achievement: technical development, mental development, and champion maturity. Meanwhile, another aspect needed in the petanque game is the physical aspect of Pujianto (2015). The physical aspect is related to the potential or ability of athletes to develop physical and mental components, the function of the body's organs, and aspects of the physical condition that support throwing shooting are arm power and wrist flexibility (Rauhe, 2022).

Flexibility is one of the physical abilities that everyone must have to produce comprehensively, smoothly, and flexibly and not experience stiffness (Prasetyo & Sahri, 2021). Factors that affect flexibility include age, gender, joint structure, muscle tissue structure, ligaments, and skin. Flexibility is essential thing in sports activities. If a person experiences a less broad range of motion in his joints, it can interfere with movement or cause muscle injury. Wrist flexibility is essential in petanque, especially shooting throws (Nurfatoni & Hanief, 2020). With better flexibility, a player can move his wrist more agilely. In shooting throws, wrist flexibility helps in throwing bobs.

Arm power is needed as a driving force when throwing. The greater the arm power

generated by the late petanque, the farther the throw will be produced by Vai et al. (2018). Especially when throwing a distance of nine meters requires a long throw, it requires a lot of explosive or arm power. The greater the arm power, the farther the shooting throw will be (Chandra Triadi, 2021).

Concentration is the ability to focus on a task without being disturbed and influenced by external and internal stimuli (Akbar, 2019), while its implementation refers to broad dimensions and focuses on specific tasks (Nurfani et al., 2022). Producing the right throw at the target requires high concentration. Concentration focuses all energy and physique on the target (Lubis & Permadi, 2021). So from that also the concentration in petanque effects when shooting. Shooting, in addition to good technique, requires calm and concentration. If players can master calm and concentration and add good technique, the ball that is shot will be right on target (Agustina & Priambodo, 2017).

The Indonesian Petanque Sports Federation (FOPI) of Indragiri Hulu Regency (INHU) was just formed in 2020. Then on average, athletes who are still relatively new to the sport of petanque still make many mistakes, especially in shooting techniques. This condition is caused by several factors, namely the organizational mechanism that has not worked as expected due to the lack of facilities and infrastructure, the availability of funds that are not yet by the needs for achievement development, the trainer's resources still lacking, the number of competitions is still minimal, the athlete regeneration system has not as expected, physical condition, lack of training program, concentration and accuracy of shooting accuracy is still low when shooting the ball does not reach the target, training intensity is still lacking. Success in achieving achievements other than technical mastery must be balanced with good physical condition. An excellent physical condition, such as arm strength and wrist flexibility, can produce good and accurate throws, then another factor that is no less important is the concentration when shooting. Opportunities from shooting opportunities cannot be adequately utilized. From the results of interviews with administrators and athletes, players often feel tense and lose concentration when shooting, which causes shooting to miss the target.

The aims of this study were: 1) to analyze the effect of wrist flexibility exercises on shooting results, 2) to analyze the effect of arm power exercises on shooting results, 3) to analyze the effect of concentration exercises on shooting results, 4) to analyze the effect of wrist flexibility exercises and arm power and concentration exercises on shooting petanque results.

METHODS

This study used quantitative research methods using a pre-experimental design consisting of 3 independent variables and 1 independent variable (Ramadan & Juniarti,

2020). The population of Petanque athletes in Indragiri Hulu Regency is 28 athletes. Sampling using purposive sampling with a sample of 18 athletes.

The instrument in this study using a shooting ability test was a game of shooting station numbers 1, 2, 3, 4, and 5 with a distance of 6 meters. Data analysis used the paired sample t-test to look at the pre-test and post-test results between the independent and dependent variables using the one-way ANOVA test for the joint test and the homogeneity test of variance (Levene's test with α> 0.05%) and hypothesis testing by calculating F test with sample normality test level (Kolmogorov-Smirnov test with α<0.05%). Prerequisite test: normality test and homogeneity test.

FINDINGS AND DISCUSSION

1) There is a significant effect of wrist flexibility on shooting petanque results. 2) Arm power has a significant effect on shooting petanque results. 3) There is a significant effect of concentration on shooting petanque results. 4) Partially, it was found that there was a significant effect of wrist flexibility, arm power, and concentration on shooting results in petanque athletes in Indragiru Hulu Regency.

Findings

The significance test tests whether all the independent variables included in the regression model simultaneously affect the dependent variable. This test is used to see whether the 3 variables independen pada model secara simultan berpengaruh terhadapvariabel dependen.

Table 1. Paired Sample Different Test T Test Wrist Flexibility, Arm Power and Concentration

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error	95% Confidence Lower	95% Confidence Upper			
Pair 1	Pre Test Kelentukan Pergelangan Tangan - Post Test Kelentukan Pergelangan Tangan	-5.889	1.231	.290	-6.501	-5.277	-20.289	17	0,000
Pair 2	Pre Test Power Lengan - Post Test Power Lengan	-3.889	1.323	.312	-4.547	-3.231	-12.466	17	0,000
Pair 3	Pre Test Konsentrasi - Post Test Konsentrasi	-3.667	.907	.214	-4.118	-3.215	-17.142	17	0,000

Based on the table above, the results of the output pair 1 obtained a significance value of 0.000 <0.05, which means that Ho is rejected and Ha is accepted. So it can be concluded that wrist flexibility training affects the shooting results of petanque athletes in Indragiri Hulu Regency.

Based on the table above, the results of the output pair 1 obtained a significance value of 0.000 <0.05, so it can be concluded that Ho was rejected and Ha was accepted. So it can be concluded that arm power training affects the shooting results of petanque athletes in Indragiri Hulu Regency.

Based on the table above, the results of the output pair 1 obtained a significance value of 0.000 <0.05, which means that Ho is rejected and Ha is accepted. So it can be concluded that concentration training affects the shooting results of petanque athletes in Indragiri Hulu Regency.

Table 2. Hypothesis Training Data on Wrist Flexibility, Arm Power and Concentration

Shooting Results					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.148	2	5.574	1.169	0,319
Within Groups	243.222	51	4.769		
Total	254.370	53			

In the variable wrist flexibility training, hand power, concentration and without concentration obtained Significant values = 0.319> 0.05, which shows. There are similarities between wrist flexibility exercises, hand power, and concentration on shooting skills in petanque athletes in Indragiri Hulu Regency.

The calculation of the normality prerequisite test for wrist flexibility in the customarily distributed table obtained a significant value of 0.110> 0.005, and the normality prerequisite test for arm power in the customarily distributed table obtained a significant value of 0.152> 0.005. The prerequisite normality test for average distribution concentrations also obtained a significant value of 0.693> 0.005. Then the homogeneity test obtained a significant value of 0.357 > 0.005, so what we are comparing is the same so that the assumption of homogeneity in one-way ANOVA is fulfilled.

Discussion

There are similarities based on the statistical results of the pre-test and post-test data on the shooting abilities of athletes in the Indragiri Hulu Petanque Regency. Based on what has been presented regarding descriptive data, prerequisite analysis tests, hypothesis testing and discussion of the results of research on the effect of wrist flexibility exercises, arm power, concentration and without concentration on the results of shooting petanque athletes in Indragiri Hulu Regency. In this study, a sample of 18 male samples was taken. This research was conducted in 16 meetings to prove the results of the exercises

applied to petanque athletes in Indragiri Hulu Regency.

Wrist flexibility exercises aim to train athletes' wrist flexibility using a wrist roll tool. This exercise is designed to relax the wrist joint. This exercise helps increase softness and flexibility through the wrist, but when done correctly, exercises will work on movement and tenderness along the arm, from the shoulder to the fingertips. It can be said that in petanque sports, the flexibility of the wrist to the ability to shoot is very influential because it is with the flexibility good wrist

that when shooting will be easy to master so that when shooting, athletes can control or hit the target ball (Kurniawan et al., 2022). From the research conducted (Isdarianti & Wiyanto, 2022; Ramadan, 2022), based on the results of calculating the magnitude of the contribution between wrist flexibility and the results of shooting accuracy at a distance of 7.5 meters in Aceh petanque athletes in 2022 it is 21.16%, and another factor influences the remaining 74.84%.

In arm strength training, the athlete uses a resistance band with both hands, and the foot position is like wanting to shoot. When shooting throws, good arm power is needed in the petanque game. So, arm power is the starting point in shooting throws in petanque sports (Kusuma, 2019). Thus, the components of the physical condition of arm power in petanque must receive attention to enable athletes to achieve maximum performance (Syamsudin et al., 2021). Then from the research carried out by (Chandra Triadi, 2021), there is a contribution between arm power and petanque shooting in UMS sports education students.

Then the athlete's concentration exercises using shooting exercises with obstacles and being given a rope from the circle to the target are followed by repetitions and sets that have been determined. Several types of concentration exercises that can be done include exercises to change attention (learning to shift attention), exercises to maintain focus (learning to maintain focus), exercises to find relevant keys (searching for relevant cues), or through games (rehearsing game concentration).) Akbar et al., (2019). The research conducted by sports (Agustina & Priambodo, 2017) states that there is no significant correlation or relationship between concentration on the results of the accuracy of shooting petanque sports in Unisa Petanque Club participants. The magnitude of the relationship between the concentration level and the shooting accuracy results in petanque sports is only 11.90%.

From the description above, it can be said that the exercises of wrist flexibility, arm power, concentration and without concentration have similarities in increasing shooting ability in petanque athletes in Indragiri Hulu Regency. It is proven from the results of the ANOVA test with a Fount: 1.169 with a significance value of 0.319. With a significance level of 0.319> 0.05, the petanque athletes of Indragiri Hulu Regency, from the statement above, can be stated that there is a significant similarity between wrist flexibility

exercises, arm power, concentration and without concentration.

CONCLUSION

The study's conclusions showed that: 1) There was an increase in wrist flexibility exercises on shooting results in petanque athletes in the Indragiti Hulu district, before being given training, with an average value of 2.94 and after being given training, increased by 8.83. 2) There was an increase in arm power training on shooting results in petanque athletes in the Indragiri Hulu district, with before being given training an average value of 6.00 and before being given training which increased by 9.89. 3) There was an increase in concentration exercises on shooting results for petanque athletes in the Indragiri Hulu district, with before-being-given training an average value of 5.39 and a before-being-given training increase of 9.06. 4) There is a similarity between the results of wrist flexibility exercises, arm power, and concentration on the shooting results of Petanque athletes in the Indragiti Hulu district. Before being given training and after being given training, the shooting results obtained have a significance of 0.319.

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