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### The Effect of Balance and Concentration Exercises on the Shooting Results of Petanque Riau Athletes

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#### Abstract

This study aimed to determine and analyze the effect of balance training on shooting results in Riau petanque athletes and the effect of concentration training on shooting results in Riau petanque athletes and investigating the effect of balance training and concentration training on shooting results in Riau petanque athletes. This study uses a quasi-experimental method with the research design "Two Group Pretest Posttest 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, 7 meters, and 8 meters, and 9 meters. The subjects in this study were Riau Petanque athletes, totalling 32 sons, which were taken from the total sampling results. The results of this study: 1) There is an effect of balance training exercises on the shooting results of the Riau Petanque athletes. 2) there is an effect of concentration training on the shooting results of the Riau Petanque athletes. 3) there is an influence between balance training and concentration training on the shooting results of Riau petanque athletes. Based on the results of this study, it can be concluded that balance and concentration training significantly affect the shooting results of the Riau Petanque athletes based on the paired samples test. Then from the two exercises, the concentration exercise is better than the balancing exercise, based on the independent samples test. It can be interpreted that balance and concentration training influence the shooting results of the Riau Petanque athletes. Still, concentration exercises have a more significant influence on the shooting results of the Riau Petanque athletes.

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## INTRODUCTION

Sport is a unifying activity of the nation, essential to improving the quality of human life. There is the latest trend in new sports that

have the competence to compete with other sports. Petanque is a sport that can compete and improve achievements in every number of games (Alvian, 2020). Petanque is a new sport

in Indonesia. The Indonesian state is familiar with the sport of petanque, which originated with the French who came to Indonesia in the early 2000s but at that time, only certain people played it (Herve & Qoriah, 2021). Petanque is one of the sports achievements contested regionally, nationally and internationally (Irwan & Pages, 2020).

At the biggest sporting event in Southeast Asia, namely the SEA Games, petanque is a sport that must be completed, and at that time, Indonesia hosted the 2011 Jakarta-Palembang event. Furthermore, the central petanque sports organization was formed, namely the Indonesian Petanque Sports Federation (FOPI), on March 11, 2011. Then as time went on, petanque sports began to spread in various provinces in Indonesia, one of which was Riau province. Riau Province joined PB FOPI in 2018. Petanque Riau is one of the training and nursery places for athletes who want to develop talent in petanque sports from various age groups in Riau Province.

Petanque is a sport of dexterity in throwing a ball made of iron by getting closer to the Boka target (wooden ball) and keeping the opponent's ball away (target) or commonly called shooting, and both feet are in a circle or commonly called a circle (Pelana, 2016). Petanque can be played on dirt, rugged, rocky and grass fields with a minimum distance of 6 meters from inside the circle on a boka (wooden ball) and a maximum of 10 meters (Santosa & Imron, 2020).

In petanque, there are 11 match numbers, namely single man, single woman, double man, double woman, double mix, triple man, triple woman, triple mix one woman two men, triple mix two women one man, shooting men, shooting woman, team (Rony, Asmawi, & Lubis, 2021). The petanque game aims to achieve maximum accuracy, meaning that to get the winning point of Bosi's throw, you have to try to get close to the jack or wooden ball (Sari, Sembiring, Hendrawan, Aditya, & Dewi 2020).

Petanque sports have two basic techniques, namely pointing and shooting. Pointing is a technique to deliver the iron ball as close as possible to the wooden ball (Boka) and make the initial strategy for starting the petanque game. Pointing in petanque matches is usually used for defensive strategies, and a beginner athlete usually does this strategy. Shooting is a technique of delivering the ball to keep the opponent's iron ball away from the target ball as far as possible Isyani & Primayanti (2020). Shooting is an essential part of the petanque game. Shooting petanque is a throw-type skill to repel bosi opponents close to Boka. (Sutrisna, Asmawi, & Pelana, 2018).

This skill is needed when the opponent's bosi is close to a boka or jack. In the game Petanque, the attack strategy uses shooting techniques. There are several essential components in shooting techniques: iron ball gripping techniques, body position, balance, follow-up motion when releasing the iron ball, and focus on Saddle shooting accuracy (2016).

The research object that is the focus of the researcher is shooting. Shooting techniques in petanque sports have a higher difficulty level than pointing techniques. Producing a good shooting throw requires a high focus on petanque athletes.

In petanque sports, especially in shooting techniques, there are several components of physical condition that affect the achievement of athlete performance, including anthropometry of height, arm length, palm length, arm muscle strength, arm muscle power, strength, and hand-eye coordination (Nurfatoni & Hanief, 2020 ). The productivity of human operational performance is strongly influenced by three main health elements: (1) Physical, where humans can work optimally without feeling significant fatigue. (2) Mental, when a person produces the best performance with full awareness and (3) Spiritual, namely the vertical relationship between the creator and creatures and the horizontal between all creatures of the universe (Kurdi, Qomarrullah, & Putra, 2015).

Even though this sport is about accuracy and feeling when playing, physical aspects must be considered in every exercise. (Susandi Eka Wahyudhi, Ismail, & Arfah, 2021) Physical condition is a fundamental component in trying to achieve the desired achievement. Furthermore, continuous training is needed to form physically and mentally. Choosing and determining training methods depends on general objectives, specific tasks, the specificity of a sport, the physical and mental maturity of athletes, and their level of

ability. The training method is also called the training method, a good way of teaching to instil certain habits, which are used to gain dexterity, accuracy, opportunities and skills (Triadi, 2021), exercise is all efforts and efforts to improve the overall physical condition with a systematic and repetitive process with increasing loads, time or intensity (Acar, 2019). The training sessions are structured with a focus on acquiring and improving technical and tactical skills (Figueira, Mateus, Esteves, Dadeliené, & Paulauskas, 2022)

Four aspects must be trained appropriately: physical, technical, tactical and mental (Raffle Henjilito, 2019). Furthermore, athlete psychology must be prioritized from several aspects of the training because it dramatically influences other aspects of training (Lubis & Permadi, 2021). In the psychological aspect, to create good focus, an athlete must also have excellent concentration to create automatic movements in athletes, especially in sports. Accuracy of concentration is the essential part of getting maximum results. Concentration focuses all energy and physique on the target so that concentration can determine the athlete's performance. Maximally or not (Agustina & Priambodo, 2017). During the match, athletes with high concentration help to stay focused on the match, such as making decisions or not being distracted by the audience or the opponent's game. Because if the athlete's concentration is low, the athlete with good technique and tactics will be lost due to decreased

concentration on the athlete while competing. In this case, that is one of the factors that must be fostered early on. In coaching and developing achievement sports, one aspect that cannot be ignored is the existence of psychological factors (Setyawati, 2014). Psychological factors include (achievement motives, intelligence, self-actualization, independence, aggressiveness, emotion, self-confidence, motivation, enthusiasm, sense of responsibility, social sense, desire to win and so on. Psychological factors can affect the outcome of a match.

Then supported by the athlete's physical condition as a supporter of achieving athlete concentration are endurance and balance. Balance is a process that maintains the centre gravity in the body's support base (Alonso, Maria, Greve, & Luis, 2009). Balance is the most crucial factor in daily activities, both in a still or moving state. (Cahya, Suparto, & Prasetyo, 2021).

Balance is divided into two, namely, static balance and dynamic balance. Balance is the ability of a person's body to maintain its position in both dynamic and static positions (Rahayu, 2015). Balance is necessary to maintain posture, respond to voluntary movements, and react to external disturbances. In the petanque sport, static balance is more dominant when shooting petanque. Then proceed with the correct basic shooting techniques, such as the bosi grip and follow-up motion, to determine the desired throw result.

It was recorded that at the national championship in Surabaya in 2018 in the triple

man number, the athlete only won a bronze medal. At the Pre-competition National Sports Week (PRA-PON) event in Jakarta in 2019, the athlete only won a silver medal in the single-man number. At the national championship at Semarang State University (UNNES) in 2020, athletes only won a silver medal in the shooting man number, then continued at the national championship at Surabaya State University (UNESA) in the same year they did not get a medal.

It was found that the factors causing the shooting results of the petanque riau game were less than optimal, including: the athlete's balance was still not good so that the shooting results were not consistently on target, the athlete's concentration which is still not well seen when shooting throws young athletes are disturbed from internal and external athletes so that the results are thrown not exactly consistent target, because petanque is still relatively new in Riau, the main obstacle is human resources who do not yet have expertise in petanque sports, which causes no specific training programs for balance training and concentration exercises, then because it is still relatively new, the facilities and infrastructure are still not adequate, the athlete recruitment mechanism is not well structured, then the athlete's psychological abilities are immature such as the athlete's concentration in shooting techniques is not good so that the athlete is less focused on carrying out the correct shooting technique movements, causing unstable athlete performance in

competitions which has an impact on achievement in Riau petanque athletes.

This study aimed to analyze the effect of balance training on shooting results in Riau petanque athletes, the effect of concentration exercises on shooting results in Riau petanque athletes, and the effect of balance training and concentration exercises on shooting results in athletes petanque.

## METHOD

This study used a quasi-experimental method with the design "Two Group Pretest Posttest Design", namely, the research design before the treatment was given a pretest first (Ramadan, Gilang & Juniarti, 2020) . Then after being given the treatment, a posttest was carried out (Sugyono, 2017). Then the sample was divided into two groups using ordinal pairing, the first group was given the treatment of balance exercises, and the second group was given the treatment of concentration exercises. Furthermore, the training process's causal influence will be seen after being given the exercise. The population in this study were

Riau evening athletes, totalling 32 male athletes. The sampling technique used total sampling, namely, 32 male athletes.

The test shooting instrument in this study used the petanque game shooting test at distances 6,7,8 & 9 with stations 1,2,3,4 &5. The data analysis technique used the T-Test test to fulfil the assumptions, and then a prerequisite analysis test was carried out, namely, the Normality Test (Kolmogorov-Smirnov test) and the Homogeneity Test of Variance (with Levene's test) hypothesis testing using (paired samples test) then different test using ( independent samples test)

## FINDINGS AND DISCUSSION

### Findings

1) there is an effect of balance training on shooting results in Riau petanque athletes. 2) there is an influence between concentration exercises on shooting results in Riau petanque athletes. 3) there is an influence between balance exercises and concentration exercises on the shooting results of Riau petanque athletes.

Table 1. *Paired Samples Test*

Exercise	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Shooting Results	-1,375	0,885	0,221	-1,847	-0,903	-6,214	15	<b>0,000</b>

Concentration Exercise	-6,375	1,821	0,455	-7,345	-5,405	-14,002	15	<b>0,000</b>
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Based on the results of the paired samples test for balance exercises, a significance value of  $0.000 < 0.05$  can be concluded, so it can be concluded that  $H_0$  is rejected and  $H_a$  is accepted. So it can be concluded that there is an effect of balance training on the shooting results of Riau petanque athletes.

Then the results of the concentration exercise obtained a significance value of  $0.000 < 0.05$ , and it was concluded that  $H_0$  was rejected and  $H_a$  was accepted. So it can be concluded that there is an effect of concentration training on shooting results for Riau petanque athletes.

Tabel.2. *Independent sampel T-Test*

Independent Samples Test										
Latihan keseimbangan dan Latihan konsentrasi		Levene's		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Differen	Std. Error	95%	
									Lower	Upper
Hasil_Shooting	Equal variances assumed	0,244	0,625	-3,132	30	0,004	-4,438	1,417	-7,331	-1,544
	Equal variances not assumed			-3,132	29,630	0,004	-4,438	1,417	-7,332	-1,543

Based on the results of the output table above, the sig value is obtained. (2-tailed) of  $0.004 < 0.05$ , it can be concluded that there is an average difference between the effect of balance exercises and concentration exercises on the shooting results of Riau petanque athletes.

## Discussion

This study was designed to improve the shooting ability of Riau petanque athletes by using balance and concentration exercises. Furthermore, the data were analyzed using the T-test with the help of SPSS. The number of samples in this study was 32 male samples

divided into two groups: the experimental group for balance exercises and the experimental group for concentration exercises.

Practice to acquire skills requires a long and planned program (Živanović, 2022). Practical activities should use learning principles (Nasso, Errico, Masullo, & Arcane, 2022). In other words, the purpose of learning is to acquire knowledge or skills, which are carried out in several stages (Dokchan, Okazaki, & Lawsirirat, 2022). Likewise, the practice should be gradual. That is, it must be done from a manageable level to a more

challenging level, from a more superficial level to a more complex level, and continuously (Sartono & Hadiana, 2017)

The results of the first hypothesis test showed a balance training effect on the shooting results of the Riau petanque athlete. In line with research (Kurniawan, Junaidi, & Hidayah, 2022), balance exercises influence the results of shooting petanque. Balance exercises are a series of movements enhanced by stretching and strengthening. The composition of the human body dramatically influences human movement (Saputro, 2014).

Balance training aims to train the athlete's static balance, which is carried out using used tires. Namely, each athlete throws a shooting shot at a predetermined target, and the athlete stands on the tire then, followed by predetermined repetitions and sets. Researchers assume balance plays a vital role in shooting results in petanque accuracy. Furthermore, balance cannot be separated from stability because it is helpful to withstand all forces that affect the human body's framework to be balanced. (Hardiyono & Nurkadri, 2018). Then it was also explained that balance is the ability to maintain the body when placed in various positions (Yundarwati & Soemardiawan, 2019). Balance elements include various body movements such as sitting, squatting, standing, walking, running and jumping, as well as the essential elements for stabilizing body positions and movements. This component is needed, especially for sports movements (Rosita, Hernawan, & Fahmy, 2019). The following includes

components in balance, namely static balance (body in a still position) and dynamic balance (body in a moving position) "(Prasetyo & Sahri, 2021; Ramadan, 2022)

The results of the second hypothesis test show that concentration training affects the shooting results of the petanque Riau athlete. Concentration is a condition in which a person's awareness is fixed on a specific object at a particular time (Irwanto & Romas, 2019). To stay focused on what is being done (Murdaningsih & Rahayu, 2020). In developing concentration exercises, you must go through several stages to produce a quality model (Hidayat & Iskandar, 2019). In concentration exercises, you are using tires as a target or target to train focus and shooting throw athletes to form parabolic throws, followed by repetition and the specified set. This research was conducted in 16 meetings to prove the results of the exercises applied to the Riau petanque athletes.

Concentration is the ability to direct attention to a task without being distracted by internal or external stimuli, and execution relates to broad dimensions and focuses on a particular task (Evgeny, Aleksandr, Yerlan, Larisa, & Alina, 2022). Researchers have the assumption that concentration has a vital role in the results of shooting petanque sports. Shooting exercises with tire circle targets to train concentration and focus as well as the level of straightness in throwing at the target (Khofifah, Judah, & Kusuma, 2021)

The results of the third hypothesis test show an influence between balance training

and concentration exercises on the shooting results of the Riau petanque athletes. Researchers have the assumption that balance exercises and concentration exercises have an essential role in petanque shooting. Balance when throwing is essential, affecting the accuracy of a petanque athlete. Of course, this is closely related to the theory of balance power, a body ability possessed by humans at various levels and can be improved through exercises that suit their goals. (Isyani & Primayanti, 2020).

Then concentration is a state in which a person's awareness is fixed on a specific object at a particular time (Rahmat & Rohyana, 2020). The better a person's concentration, the longer he can concentrate. In sports, concentration plays a vital role. With reduced or disrupted athlete concentration during training, let alone matches, various problems will arise. (Irwanto & Romas, 2019). Then it can be concluded that even though the two exercises have the same critical role, concentration exercises are more important in petanque sports. As seen from the statistical results, concentration exercises have a very significant change in value.

## CONCLUSION

Based on the research findings and discussion, it can be concluded that from the training methods applied, balance training and concentration exercises affect the shooting results of the Riau petanque athletes. Then there is an influence between balance and

concentration exercises on the shooting results of the Riau petanque athletes. Although the two exercises have the same effect, concentration exercises are more dominant in influencing the shooting results, which can be seen from the results of the statistical data obtained.

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