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APLICATION OF *CONTINUOUS TRAINING TO INCREASE VO2MAX IN BADMINTON ATHLETE*

DEFANY IFADH (1808031)

SPORT COACHING EDUCATION INDONESIA UNIVERSITY OF EDUCATION

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INTRODUCTION

- **Vo2Max is a key indicator of aerobic capacity and cardiovascular fitness**
- **Badminton players need a high Vo2Max to perform better in fast and long matches**
- **Low Vo2Max levels can cause injuries because the body is less capable of handling intense training loads.**

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LITERATURE REVIEW

- **Harsono (2016) suggests that performing continuous training at 70% intensity for 3 sessions per week over several weeks will lead to noticeable improvements in endurance.**
- **Nesra Barus (2020) states that the continuous training method has a significant impact on improving VO2Max**
- **Subarjah (2016) notes that badminton players need extra oxygen because the sport mainly involves anaerobic activity, which requires speed and dynamic movements. As a result, a high VO2Max is essential to meet these demands.**
- **Putri (2014) The data shows that injuries are most common in the 12-16 age group due to overtraining, which involves training 5-7 hours a day and 6-7 days a week.**

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METHODS

Research Method: Experimental Method

Research Design: Pretest-Posttest Group Design

Population: 16 badminton athletes from Feiyue Badminton Club, aged 12-16 years, who train regularly

Sample: Saturation sampling technique was used, with a pairing crossover ABBA method. The sample is 16 participants.

Research Instrument: Aerobic test using the Balke test or a 15-minute run, adjusted to basic fitness components for badminton.

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FINDINGS

RESULT *CONTINUOUS SLOW RUNING AND CONTINUOUS FAST RUNNING*

	Pre-Test (m)	Post-Test(m)	Vo2Max	n-Gain
	Average			
Continuous Slow Running	**2447.5**		**40.025**	**1.54**
Continuous Fast Running	**2507.6**		**39.425**	**1.48**

The results of the test for *continuous slow running* and *continuous fast running* groups show improvements in Pre-Test and Post-Test result using the Balke test. The average Vo2Max for the *continuous slow running* group is 40.025, and *continuous fast running* shows it is 39.425. there is also the results of n-Gain average indicate improvement for *continuous slow running* is 1.54 and for *continuous fast running* is 1.48.

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FINDINGS

DESCRIPTIVE STATISTIC

	N	minimum	maximum	Mean	Std. Deviation
Pre-Test slow running groups	8	36.2	40.3	38.48	1.7529
Post-Test slow running groups	8	37.6	42.6	40.02	1.6202
Pre-Test fast running groups	8	36.1	40.3	37.94	1.8353
Post-Test Fast running groups	8	37.7	41.3	39.42	1.2372
Valid N (listwise)	8				

Also it can be seen form the average and standart deviation calculation that both groups show an improvment.

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FINDINGS

SIMPLE T-TEST

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	td. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Pre-Test and Post-test Group A	1.5375	.7463	.2639	-2.1614	.9136	5.827	7	.001
Pair 2 Pre-Test and Post-Test Group B	1.4875	.9906	.3502	-2.3156	.6594	4.247	7	.004

Group A has a t-value of 5.827, and Group B has a t-value of 4.247. this shows that both exercises have a significant effect on athletes Vo2Max.

TEST OF DIFFERENCESS

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
nilai	Equal variances assumed	.680	.423	.832	14	.419	.6000	.7207	-.9458	2.1458
	Equal variances not assumed			.832	13.092	.420	.6000	.7207	-.9559	2.1559

Based on the Pre-test and Post-test data, it can be concluded that there is no significant difference between *continuous slow* and *continuous fast running* in improving badminton athlete's Vo2Max.

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DISCUSSION

- Continuous slow running improved the VO2Max of badminton athletes by 8%. Athletes who did this training had more effective recovery times, could perform techniques and strokes better.

- Continuous fast running increased VO2Max by 3%. It improved recovery time and allowed athletes to maintain game intensity longer without significant performance drops.

- An independent t-test showed a Significance (2-tailed) value of 0.419, which is greater than 0.05, indicating no significant difference between slow and fast running exercises.

- Both continuous slow running and continuous fast running are effective strategies for improving VO2Max and endurance in badminton athletes.

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CONCLUSION

- There is a significant effect of continuous slow running training on improving VO2Max in Feiyue Badminton Club athletes.
- There is a significant effect of continuous fast running training on improving VO2Max in Feiyue Badminton Club athletes.
- There is no significant difference between the effects of continuous slow running and continuous fast running training on improving VO2Max in Feiyue Badminton Club athletes.

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