



Improving Limb and Arm Muscle Power of Volleyball Athletes through Circuit Training Method

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Sidik et al. (2019) physical condition is an important component and is the basis for developing and improving the technical, tactical, strategic and mental skills of athletes.

Achmad (2016) states that factors affecting the ability of volleyball athletes include arm length, arm muscle explosiveness (power), and leg muscle explosiveness (power).

Similarly, Yulifri et al. (2018) assert that good physical abilities, such as arm and leg muscle explosiveness, greatly benefit volleyball athletes by enhancing their ability to attack (smash) and block

FORMULATION OF THE PROBLEM

1. Is there an effect of training with the circuit training method on increasing leg muscle power and arm muscle power?
2. Is there an effect of training without the circuit training method on increasing leg muscle power and arm muscle power?
3. Is there a difference in the effect of training with the circuit training method and training without the circuit training method on increasing leg muscle power and arm muscle power?

RESEARCH HYPOTHESIS

1. There is an effect of training with the circuit training method on increasing leg muscle power and arm muscle power
2. There is an effect of training without the circuit training method on increasing leg muscle power and arm muscle power
3. There is a difference in the effect between training with the circuit training method and training without the circuit training method on increasing leg muscle power and arm muscle power.

MATERIALS AND METHODS

Research Design

Research Method



*Two Group Pre-test Post-test
Group Design*

Source : (Fraenkel, 2012)

KELOMPOK A	O1	X1	O2
KELOMPOK B	O1	X2	O2

Populations & Sample



Populations

All athletes from Gema Club, Garut Regency



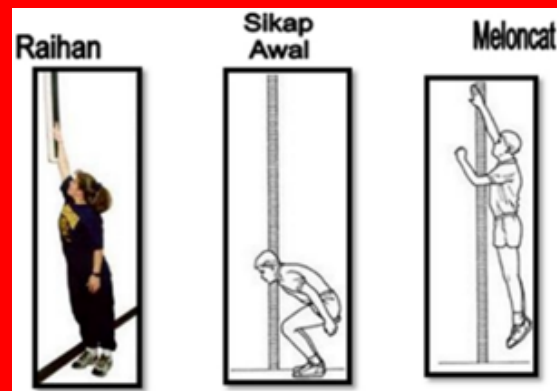
Sample

- Purposive sampling
- 12 persons

Experiment



Research Instrument



Source : (Pratama & Alnedral, 2018)



Source : (Mulyono, 2008)

Descriptions :

Group A : Experimental Group

Group B : Control Group

O1 : Pre-test

O2 : Post-test

X1 : Treatment with *Circuit Training*

X2 : Treatment without *Circuit Training*

Normality Test



Group Experiment

Group	Data	Shapiro-Wilk			Description
		Statistic	N	Sig.	
Experiment	Pre-Test	,304	6	,087	Normal
	Post-Test	,281		,150	Normal
Medicine Ball	Pre-Test	,173		,200	Normal
	Post-Test	,168		,200	Normal



Group Control

Group	Data	Shapiro-Wilk			Description
		Statistic	N	Sig.	
Control	Pre-Test	,297	6	,108	Normal
	Post-Test	,273		,182	Normal
Medicine Ball	Pre-Test	,291		,121	Normal
	Post-Test	,298		,104	Normal

Homogeneity Test

Data		Levene Statistic			Description
		Statistic	N	Sig.	
Vertical Jump	Pre-Test	,889	6	,014	Homogeneous
	Post-Test	,698		,038	Homogeneous
Medicine Ball	Pre-Test	,740		,410	Homogeneous
	Post-Test	,761		,404	Homogeneous

Paired Sample T-Test

Group	Variable	t-hitung	df	Sig. (2-tailed)
Experiment	Vertical Jump	-11,926	5	,000
	Medicine Ball	-15,016	5	,000
Control	Vertical Jump	-13,558	5	,000
	Medicine Ball	-6,635	5	,001

Independent Sample T-Test

Group	Variable	t-hitung	Sig. (2-tailed)
Experiment	Vertical Jump	-20,7	,000
	Medicine Ball	-20,6	,000
Control	Vertical Jump	-27,3	,000
	Medicine Ball	-27,4	,000

1

Circuit training exercises show that athletes who routinely perform the exercises, experience significant improvements in their leg muscle power and arm muscle power. This happens because circuit training exercises help activate and build muscles that are on target both and during training and during competition build the appropriate muscles at the target.

2

The success of conventional training is highly dependent on the discipline and consistency of athletes in following the training program. Athletes who routinely and diligently undergo this training will see significant improvements in leg muscle power and arm muscle power. With a balanced approach between physical strengthening, technique development, and tactical simulation, conventional training can provide a strong foundation for athletes to improve leg muscle power and arm muscle power.

3

The results of this study indicate that through the circuit training method and control group training can have a significant effect on increasing leg muscle power and arm muscle power, However, what distinguishes the two training methods is that training with the circuit training method has a more significant effect than the control group training on increasing leg muscle power and arm muscle power.

1

There is a significant effect of training with the circuit training method on the increase in leg muscle power and arm muscle power

2

There is an effect of training without the circuit training method on increasing leg muscle power and arm muscle power

3

There is a difference in the effects of training with the circuit training method and training without the circuit training method on increasing leg muscle power and arm muscle power

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Thank You
