THE DIFFERENCE OF INFLUENCE OF CIRCUIT TRAINING RATIO OF 1:1 AND 1:2 AGAINST INCREASE IN VO2 MAX STUDENTS EXTRACURRICULAR PARTICIPANTS HIGH SCHOOL FUTSAL

BANGUN JAYA

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***Abstrac:*** Circuit training with rasio 1:1 and rasio 1:2 conducted during 4 week, in 1 week 3 meeting. Intensity training 60 % until 70 % . (2) Dependent variable : Maximal oxygen volume (VO2 Max). Data processing used statistical patern M-s with formula t-teat. Data analysis technique used formula t-test with computer assistance SPSS program version 23. Research of result showed that the result pre-test circuit training rasio 1:1 was 42,63 and post-test was 48,18. While circuit training rasio 1:2 average pretest was 43.00 and post-test was 46,18. The result conclution that was circuit training rasio 1:1 and rasio 1:2 could enhancement maximal oxygen volume (VO2 Max) on participant futsal extracurrcural senior high school Bangun Jaya. Cicuit training rasio 1:1 was better to increase VO2 Max. Suggestion could be gave was better used rasio 1:1 in enhancement maximal oxygen volume (VO2 Max) for futsal players with the used training program and from of varred training so that the players more skilled and not bored.

Keywords : *circuit training, VO2 max, rasio work-breaks.*

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| **Intraduction** |

The main factor of success in the exercise and sports matches are affected by the level of endurance athlete's ability, so the ability of the resilience of the players a good futsal will be able to do the job with physical conditions and maximum durability. By having a physical condition and excellent durability by every athlete will be accomplished a feat that is optimal.

Based on the results of the interview with Mr. Saidi futsal coach Emery, s. Pd said that levels of endurance and fitness body extracurricular participants maximum, less futsal known insufficient due to the ease of the players experience fatigue and exhaustion when playing futsal 2 x 10 minute clean. Endurance and fitness of the body characterized by levels of VO2 Max attendees are still lacking. By having a physical kodisi and durability less very difficult to achieve a maximum achievement. From it to achieve maximum achievements of researchers looking for solutions in overcoming resistance and fitness level of the players playing futsal SMA Negeri Wake Jaya. To increase endurance and fitness of the players marked with VO2 Max maximum, then researchers will create a circuit training workout programs by using two methods of exercise that is the ratio of 1:1 and 1:2 with a different interval workouts, researchers also want to find out from both methods it which more effectively improve VO2 Max, with forms and different methods lead to different results.

Circuit training can improve your VO2 Max futsal players, but of course with the exercises there is effective between the circuit with the ratio 1:1 ratio 1:2. Based on the above venomena the author wishes to conduct research with the title "a difference of influence of Circuit Training With a ratio of 1:1 Dam 1:2 Against increase in VO2 Max Students Extracurricular Participants high school Futsal wake up."

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| **Study Of Literature** |

Study Of Literature

VO2 Max is the maximum oxygen eksersi. To improve VO2 Max training programs must be done in a careful, systematic, regular and always increasing, following the principles and methods of exercise is accurate so that achieved the expected goals. Thus an alternative training are used and applied in increasing VO2 Max is circuit training.

A method of circuit training can be a solution to improve the maximum volume of oxygen (VO2 Max). The selection of the type of training load in a circuit training should be tailored to the aspect of being a general purpose circuit training to be achieved. Circuit training is carried out in an area that has been determined to have some post, e.g. 8 post. Every post, implementation should be done in the form of specific exercises. Activities in each post is a great development for the whole of the components of physical fitness. To increase aerobic endurance one should practice on the practice 70-80 DNM (Maximum Pulse) and lasts a long time.

Energy is still leaning on the aerobic 60%-80% old priode work 30 seconds to 3 minutes, 30 seconds recovery priode old – 3 minutes. A comparison between the work and the recovery ratio of 1.1 up to 1.2. Some type of recovery ratio in relation to the stated recovery work can be expressed as follows: 1:1 suggests that the recovery interval of time equal to twice the time interval work. In this research the ratio of work breaks work breaks and the ratio 1:1 1:2 will ditreatmentkan on circuit training that had been planned and created a training program in accordance with the principle of the exercise.

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| **Methods** |

The first thing in the execution of experiments using single-subject design is done by giving the test to a subject that has not been given the treatment called pre test after it was divided into two groups experimental (a) and (b) experiments using ordinal pairing, and students who are low or insufficient results of VO2 Max extracurricular participants futsal done treatment (X) with circuit training ratio of 1:1 and 1:2 for a period of time. After it was given more tests to measure levels of VO2 Max IE posttest (O2) or test after being given the treatment, compare the Pre test (O1) and Post test (O2) to determine how big the differences that arise, then the data were analyzed using t-test. Regarding the type of research used in the study are Circling. As for the form of the draft in question is listed in the image below, (Soekidjo, 2012:58).

*Pretest*  Treatment *Posttest*

01 X Kel. Eksperimen (a) 02

01 X Kel Eksperimen (b) 02

Description:

01 = *Pretest* (before ditreatment) measuring VO2 Max values of the participants using the MFT

X = treatment using circuit training with a ratio of 1:1 dan 1:2, Before treatment in doing break-out group using ordinal pairing technique.

02 = the value of the posttest (after treatment in) measure the value VO2 Max using MFT.

1. Test Table Hipotesisi ratio 1:1

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| --- | --- | --- | --- | --- | --- |
| **Group** | ***Mean*** | ***Mean Difference*** | **t**count | **ttabel** | **Sig.** |
| *Pretest* | 43.58 | 5.2714 | 11.687 | 2.059 | 0.000 |
| *Posttest* | 48.85 |

1. Test Table Hipotesis Ratio 1:2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Group** | ***Mean*** | ***Mean Difference*** | **tcount** | **ttabel** | **Sig.** |
| *Pretest* | 43.85 | 3.4286 | 4.379 | 2.059 | 0.001 |
| *Posttest* | 47.27 |

1. Test Tabel Hipotesis Efektivitas Circuit Traning 1:1 and 1:2

Test Tabel Persentase An increase in the Circuit Rasio 1:1

|  |  |  |  |
| --- | --- | --- | --- |
| *Mean Pretest* | *Mean Posttest* | *Mean Difference (Mean Posttest-Mean Pretest)* | *Persentase*  *(Mean Df/Mean Pretest x100%)* |
| 43.58 | 48.85 | 5.2714 | * 1. % |

Test Tabel Persentase An increase in the Circuit Rasio 1:2

|  |  |  |  |
| --- | --- | --- | --- |
| *Mean Pretest* | *Mean Posttest* | *Mean Difference (Mean Posttest-Mean Pretest)* | *Persentase*  *(Mean Df/Mean Pretest x100%)* |
| 43.85 | 47.27 | 3.4286 | 7.82 % |

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| **Discussion** |

Based on the results of data analysis on the hypothesis in the study noted that there were significant effects of circuit training 1.1 against an increase in VO2 Max students extracurricular participants futsal SMA Negeri Bangun Jaya 2016. This is shown from the value of thitung is greater than on the t table (11,687 > 2,059) with the value significance of smaller significance 0.000 0.05 (0.000 < 0.05).

The results of data analysis it is known that the average rating on the posttest is greater than on the pretest (48,18 > 42,63). This means that effective training circuit applied to improve VO2 Max students extracurricular participants futsal SMA Negeri Bangun Jaya 2016. Next, to find out the percentage increase in VO2 Max students extracurricular participants futsal SMA Negeri Bangun Jaya 2016 performed calculations (Mean difference/mean pretest x 100%) i.e. (5,714/43,58 x 100%). Based on the results of the calculation of the percentage of retrieved results that increase in VO2 Max extracurricular participants Futsal SMA Negeri Bangun Jaya 2016 of 12.09%.

Based on the results of data analysis on the hypothesis in the study noted that there was also a significant influence of circuit training 1.2 against the increase in VO2 Max students extracurricular participants futsal SMA Negeri Bangun Jaya 2016. This is shown from the value of thitung is greater than on the t table (4,379 > 2,059) with the value significance of significance smaller than 0.001 0.05 (0.001 < 0.05).

The results of data analysis it is known that the average rating on the posttest is greater than on the pretest (47,27 > 43,85). This means that effective training circuit applied to improve VO2 Max students extracurricular participants futsal SMA Negeri Bangun Jaya 2016. Next, to find out the percentage increase in VO2 Max students extracurricular participants futsal SMA Negeri Bangun Jaya 2016 performed calculations (Mean difference/mean pretest x 100%) i.e. (3,4286/43,85 x 100%). Based on the results of the calculation of the percentage of retrieved results that increase in VO2 Max extracurricular participants futsal SMA Negeri Bangun Jaya 2016 of 7.82%.

Based on the results of the analysis of the data above, it can be concluded that an increase in VO2 Max through circuit training ratio of 1.1 and 1.2 provide training circuit influence in increasing VO2 Max students extracurricular participants SMA Negeri Bangun Jaya 2016 and circuit training ratio 1.1 has better effectiveness compared to circuit training ratio of 1.2 in the increase in VO2 Max.

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| **Conclusions and Suggestions** |

**Conclusions**

The results of this research can then take the conclusions as follows:

1) Circuit training with a ratio of 1:1 influence on the increase of the maximum volume of oxygen (VO2 Max) in the Bnagun Jaya of SMA Negeri futsal player.

2) Circuit training with a ratio of 1:2 influence on the increase of the maximum volume of oxygen (VO2 Max) in the Bangun Jaya of SMA Negeri futsal player.

3) Circuit training with a ratio of 1:1 better in the compare circuit training with a ratio of 1:2 against an increase in the maximum volume of oxygen (VO2 Max) in the Wake of SMA Negeri futsal player.

**Suggestions**

Based on the results of research conducted, the advice can be

given are as follows:

1.) for students to practice in accordance with the pattern of regular exercise and continuously to improve physical or skill in the game of futsal.

2) gym teacher/coach of futsal can use circuit training as a method to increase the capacity of maximum volume of oxygen (VO2 Max) on the futsal players.

3). Should a coach using circuit training ratio of 1:1 as a method for increasing the maximum volume of oxygen (VO2 Max) with an exercise program that is good and right.

4.) Should always consider a form of exercise trainer and exercise programs varied so that players are more skilled and the does not get tired to follow the exercise.

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| **REFERENCES** |
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Soekidjo Notoatmojo. 2012. *Metedologi penelitian kesehatan.* Jakarta : Rineke Cipta.

Eri Pratiknyo, D. 2009. *Tes dan Pengukuran dan Evaluasi Olahraga*. Departemen Pendidikan Nasional Universitas Negeri Semarang.

Imanudin, Iman. 2008. *Teori Ilmu Kepelatihan*. Bandung: UPI.

Intan Watulinga, dkk. Pengaruh Latihan Fisik Aerobik Terhadap VO2 Max Pada Mahasiswa Pria Dengn Berat Badan Lebih (Overweight). *Jurnal e-Biomedik (eBM*), Vol 1/No.2/Juli,2013:1064-1068.

Irawan Ariadi. 2012. *Efektivitas Latihan Sirkuit Dengan Periodisasi Jangka Pendek Terhadap Stamina Pada Atlet Puslat Kendal* (Studi Eksperimen Pada Atlet Puslat Kendal, *Skripsi* Program Sarjana Universitas Negeri Semarang).

Ismaryati. 2011. *Tes dan Pengukuran Olahraga*. Surakarta. LPP UNS dan UNS Press.

Sukadiyanto dan Dangsina Muluk. 2011. *Melatih Fisik*. Bandung: PT. Lubug Agung. Pengaruh Latihan Fisik Terprogram Terhadap Perubahan Nilai Konsumsi Oksigen Maksimal (VO2) Pada Siswi Sekolah Boal Voli Tugu Muda Semarang

Uliyandri.2009.*.* *Skripsi*. Semarang : Universitas Diponogoro.