

PENGARUH METODE *CIRCUIT TRAINING AEROBIC* TERHADAP
PENINGKATAN *POWER ENDURANCE* OTOT TUNGKAI

SKRIPSI

Diajukan untuk memenuhi sebagian dari syarat untuk memperoleh gelar
Sarjana Sains Ilmu Keolahragaan



Oleh

Odin Hamdani

1504850

ILMU KEOLAHRAGAAN

FAKULTAS PENDIDIKAN OLAAHRAGA DAN KESEHATAN

UNIVERSITAS PENDIDIKAN INDONESIA

2019

**PENGARUH METODE *CIRCUIT TRAINING AEROBIC* TERHADAP
PENINGKATAN *POWER ENDURANCE* OTOT TUNGKAI**

oleh
ODIN HAMDANI
NIM 1504850

diajukan untuk memenuhi sebagian syarat untuk memperoleh gelar
Sarjana Sains

© Odin Hamdani
Universitas Pendidikan Indonesia
2019

Hak Cipta dilindungi undang-undang.

Skripsi ini tidak boleh diperbanyak seluruhnya atau sebagian,
Dengan dicetak ulang, difoto copy, atau cara lainnya tanpa ijin dari penulis.

**PENGARUH METODE *CIRCUIT TRAINING AEROBIC* TERHADAP
PENINGKATAN *POWER ENDURANCE* OTOT TUNGKAI**

Disetujui dan disahkan oleh pembimbing:

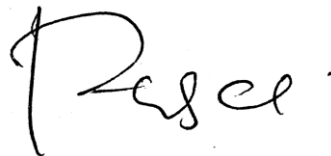
Pembimbing I



Iman Imanudin S.Pd., M.Pd

NIP. 19750810 200112 1 001

Pembimbing 2



Agus Rusdiana M.Sc., Ph.D

NIP. 19760812 200112 1 001

Mengetahui

Ketua Program Studi Ilmu Keolahragaan



Mustika Fitri, M.Pd., Ph.D

NIP. 19681220 199802 2 001

ABSTRAK

PENGARUH METODE *CIRCUIT TRAINING AEROBIC* TERHADAP PENINGKATAN *POWER ENDURANCE* OTOT TUNGKAI

Odin Hamdani

Pembimbing I Iman Imanudin S.Pd., M.Pd
Pembimbing II Agus Rusdiana M.Sc., Ph.D

Olahraga prestasi adalah olahraga yang membina dan mengembangkan olahragawan secara terencana, berjenjang, dan berkelanjutan melalui kompetisi untuk mencapai prestasi dengan dukungan ilmu pengetahuan dan teknologi keolahragaan. Permasalahan yang terjadi adalah kalenderisais kompetisi yang tidak tepat waktu. Tujuan penelitian tersebut untuk mengetahui bagaimana peningkatan *power endurance* otot tungkai setelah diberikan program *circuit training aerobic*. Metode penelitian yang digunakan adalah *The One-Group Pretest-Posttest Design* dengan memberikan perlakuan kepada mahasiswa tingkat pertama Ilmu Keolahragaan FPOK UPI yang berjumlah 10 orang. Hasil penelitian menunjukkan bahwa *Circuit Training Aerobic* memberikan dampak yang signifikan terhadap peningkatan *power endurance* otot tungkai, *pre-test* mendapat rata rata 39,00 kemudian setelah diberikan treatment dengan *Circuit Training Aerobic* mendapatkan hasil *post-test* rata rata 54,20. Hasil uji hipotesis menunjukkan nilai *signifikasi* $0,000 < 0,05$, maka H_0 ditolak. Dapat disimpulkan bahwa terdapat pengaruh *circuit training aerobic* terhadap peningkatan kemampuan *power endurance* otot tungkai.

Kata kunci : Olahraga Prestasi, *Circuit Training Aerobic*, *Power Endurance* Otot Tungkai

ABSTRACT

EFFECT OF METHOD CIRCUIT TRAINING AEROBIC FOR ENHANCEMENT POWER ENDURANCE LEG MUSCLE

Odin Hamdani

Advisor I Iman Imanudin S.Pd., M.Pd

Advisor II Agus Rusdiana M.Sc., Ph.D

Sports achievement is a sport that fosters and develops sportsmen in a planned, tiered, and supported through competition to achieve achievements with the support of sports science and technology. The problem that occurs is the calendar of the competition that is not on time. The purpose of the study was to find out how to increase power endurance of leg muscle after being given an aerobic circuit training program. The research method was use The One-Group Pretest-Posttest Design by giving treatment to ten FPOK UPI Sports Science first-level students. The result show that circuit training aerobic has a significant impact on increasing power endurance of leg muscle, the pre-test received an average of 39.00 then after being given treatment with circuit training aerobic, the average post-test results were 54.20. Hypothesis test results show a significance value of $0,000 < 0,05$, then H_0 is rejected. It can be concluded that there is an effect of aerobic circuit training on increasing the power endurance ability of the leg muscles.

Keyword : Sport Achievement, Circuit Training Aerobic, Power Endurance Leg Muscle.

DAFTAR ISI

| | |
|--|------|
| PERNYATAAN..... | iv |
| UCAPAN TERIMAKASIH..... | v |
| ABSTRA..... | vii |
| ABSTRACT..... | viii |
| KATA PENGANTAR | ix |
| DAFTAR ISI..... | x |
| DAFTAR TABEL..... | xi |
| DAFTAR GAMBAR | xi |
| DAFTAR LAMPIRAN..... | xi |
| | |
| BAB I PENDAHULUAN..... | 1 |
| 1.1 Latar Belakang Masalah | 1 |
| 1.2 Rumusan masalah | 5 |
| 1.3 Tujuan Penelitian | 5 |
| 1.4 Manfaat Penelitian..... | 5 |
| 1.5 Struktur Organisasi..... | 6 |
| | |
| BAB II KAJIAN PUSTAKA | 7 |
| 2.1 Olahraga Prestasi | 7 |
| 2.2 Latihan | 9 |
| 2.3 Prinsip – Prinsip Dasar Latihan | 10 |
| 2.4 Power endurance..... | 12 |
| 2.5 Circuit Training Aerobic..... | 13 |
| 2.6 Hubungan Circuit Training Aerobic Dengan Power Endurance | 15 |
| 2.7 Penelitian Dahulu yang Relevan..... | 17 |
| 2.8 Hipotesis | 18 |
| | |
| BAB III METODE PENELITIAN..... | 19 |
| 3.1 Metode Penelitian | 19 |
| 3.2 Desain Penelitian | 19 |
| 3.3 Partisipan | 20 |
| 3.4 Populasi dan Sampel..... | 20 |
| 3.5 Instrument Penelitian | 20 |
| 3.6 Prosedur Pengambilan Data..... | 21 |
| | |
| BAB IV TEMUAN DAN PEMBAHASAN | 29 |
| 4.1 Temuan Penelitian | 29 |
| 4.1.1 Analisa Deskriptif | 30 |
| 4.1.2 Uji Normalitas..... | 30 |
| 4.1.3 Uji Hipotesis Paired Sample t Test..... | 31 |
| 4.2 Pembahasan | 33 |
| | |
| BAB V SIMPULAN, IMPLIKASI DAN REKOMENDASI..... | 34 |
| 5.1. Simpulan..... | 34 |
| 5.2. Implikasi | 34 |
| 5.3. Rekomendasi..... | 35 |
| DAFTAR PUSTAKA | 36 |

DAFTAR TABEL

| | |
|--|----|
| Table 3.1 Program Harian Minggu Ke 1..... | 25 |
| Table 3.2 Program Harian Minggu Ke 2..... | 26 |
| Table 3.3 Program Harian Minggu Ke 3..... | 26 |
| Table 3.4 Program Harian Minggu Ke 4..... | 27 |
| Table 3.5 Program Mingguan | 27 |
| Table 4.1 Hasil Test Power Endurance | 29 |
| Table 4.2 Hasil Descriptive Statistics | 30 |
| Table 4.3 Hasil Normalitas | 31 |
| Table 4.5 Paired Samples Test | 32 |

DAFTAR GAMBAR

| | |
|--|----|
| Gambar 2.1 Ketergantungan Antara Kemampuan Biomotor..... | 17 |
| Gambar 3.1 Hurdle..... | 21 |
| Gambar 3.2 Push up | 22 |
| Gambar 3.3 Sit up | 22 |
| Gambar 3.4 Squat jump..... | 23 |
| Gambar 3.5 Bench dip..... | 23 |
| Gambar 3.6 Back up..... | 23 |
| Gambar 3.7 Hurdle..... | 24 |
| Gambar 3.8 Doeuble crunch | 24 |
| Gambar 3.9 Squat..... | 24 |
| Gambar 3.10 Flank..... | 24 |
| Gambar 3.11 Denah Circuit Training Aerobic..... | 25 |
| Gambar 4.1 Hasil Peningkatan Pre-Test Post-Test | 32 |

DAFTAR LAMPIRAN

| | |
|---|----|
| LAMPIRAN..... | 39 |
| Lampiran 1 Data Hasil test Hurdle Jump..... | 39 |
| Lampiran 2 Hasil OutPut SPSS..... | 40 |
| Lampiran 3 Grafik Data signifikan | 41 |
| Lampiran 4 Surat Keterangan (SK)..... | 42 |
| Lampitan 5 Kartu Bimbingan..... | 45 |
| Lampiran 6 Surat Izin Penelitian..... | 47 |
| Lampiran 7 Dokumentasi Gambar Penelitia | 48 |

DAFTAR PUSTAKA

1. Sumber Buku dan Jurnal

- Blumenstein, Boris and Ronnie Lidor. 2005. "International Journal of Sport Periodization and Planning of Psychological Preparation in Elite Combat Sport Programs : The Case of Judo." (September 2013):37–41.
- Bollók, Sándor, Johanna Takács, Zsuzsanna Kalmár, and Beáta Dobay. 2011. "External and Internal Sport Motivations of Young Adults." *Biomedical Human Kinetics* 3:101–5.
- Bompa, Tudor O. 1999. *Periodization Training for Sports*. Human Kinetics.
- Bompa, Tudor O. and G. Gregor Haff. 2009. *Periodization Theory Theory and Methodology of Training*. Fifth Edit.
- Brett, K. and J. Chris. 2013. "CIRCUIT TRAINING USING BODY WEIGHT : Maximum Results with Minimal Investment." *ACSM's HEALTH & FITNESS JOURNAL* 17(3):8–13.
- Brian, Mackenzie and Cordoza Glen. 2012. *POWER SPEED ENDURANCE. A Skill-Based Approach to Endurance Training*.
- Cappa, Dario F. and David G. Behm. 2011. "Training Specificity of Hurdle vs. Countermovement Jump Training." *Journal of Strength and Conditioning Research* 25(10):2715–20.
- Dick, By Frank W. and Great Britain. 1989. "DEVELOPMENT OF MAXIMUM SPRINTING SPEED." 3475–80.
- Djokic, Zoran. 2014. "BASIC AND SPECIAL PHYSICAL PREPARATION OF TOP TABLE TENNIS." (January 2003).
- Foster, Carl, Jose A. Rodriguez-marroyo, Carl Foster, Jose A. Rodriguez-marroyo, and Jos J. De Koning. 2017. "Monitoring Training Loads : The Past , the Present , and the Future Monitoring Training Loads : The Past , the Present , and the Future." (May):2–8.
- Fraenkel, Jack R., Norman E. Wallen, and Helen H. Hyun. 2012. *How to Design and Evaluate Research in Education*. Vol. 6.
- Gaesser, G. A. and L. A. Wilson. 1988. "Effects of Continuous and Interval Training on the Parameters of the Power-Endurance Time Relationship for High-Intensity Exercise." 9:417–21.
- Imanudin, Iman. 2017. *Kondidi Fisik*.
- Impellizzeri, Franco, Rampinini, and Samuele M. M. Ermanno Marcora. 2005. "Physiological Assessment of Aerobic Training in Soccer." *Journal of Sports Sciences* 23(6):583–92.
- Juskhia, John and Zafar Sidik Dikdik. 2017. "(Jurnal Keipelatihan Olahraga, Volume 10, No. 2 Desember 2017) ISSN 2086-339X." 10(2):1–11.
- KEMENPORA. 2017. "Rencana Strategis Kementrian Pemuda Dan Olahraga."
- Kumar, P. P. S. Paul. 2013. "The Effect of Circuit Training on Cardiovascular Endurance of High School Boys." 13(7).
- Lambert, Michael I., Wayne Viljoen, Andrew Bosch, Alan J. Pearce, and Mark Sayers. 2005. "General Principles of Training."
- Lombardi, Julie. 2013. "Aerobic and Strength Training Circuit." *Strategies* 12(5):25–28.

- M. Babu, Sudhakar and P. P. S. Paul Kumar. 2014. "Effect of Continuous Running Fartlek and Interval Training on Speed and Coordination among Male Soccer Players I . Introduction Aerobic Physical Work out Are Done with Oxygen . Use of Oxygen in the Body Metabolic or Energy Generating Process to Perform Th." 1(1):33–41.
- Maniazhagu, D., C. Robert Alexander, Sukumar Sha, and P. Alexander. 2011. "Effects of Aerobic Training and Circuit Training on Muscular Strength and Muscular Endurance." 4(2):132–34.
- Maxwell, L. Howell and W. R. Morford. 2013. "Circuit Training." *Ergonomics* 2(2):183–86.
- Mayorga-Vega, Daniel, Jesús Viciano, and Armando Cocca. 2013. "Effects of a Circuit Training Program on Muscular and Cardiovascular Endurance and Their Maintenance in Schoolchildren." *Journal of Human Kinetics* 37(1):153–60.
- Miró, Joan. 2013. "Physical Condition." 1–5.
- Muniraj, S. 2016. "IMPACT OF OWN BODY WEIGHT CIRCUIT TRAINING PROGRAM ON PHYSICAL AND PHYSIOLOGICAL VARIABLES OF SCHOOL BOYS."
- Naclerio, Fernando, F Naclerio, J. Moody, Chapman M. Applied, Periodization A. Methodological, Approach J. Hum, and Sport Exerc. 2013. "Applied Periodization : A Methodological Approach." 8(2):350–66.
- Nayeem, Showkat and Parveen Huma. 2017. "Communications Research : Experimental Method." (July):0–12.
- Patel, Harsh, Hassan Alkhawam, Raef Madanieh, Niel Shah, Constantine E. Kosmas, and Timothy J. Vittorio. 2017. " Aerobic vs Anaerobic Exercise Training Effects on the Cardiovascular System ." *World Journal of Cardiology* 9(2):134.
- Reiman, Michael P. 2006. *Training for Strength , Power , and Endurance REHABILITATION FOLLOWING A SURGI-*. Second Edi. Elsevier Inc.
- Tasxkin, Halil. 2009. "EFFECT OF C IRCUIT T RAINING ON THE." 23(6):1803–10.
- Vealey, Robin S. 2018. "A Periodization Approach to Building Confidence in Athletes." *Journal of Sport Psychology in Action* 0(0):1–12.
- Walliman, Nicholas. 2014. *Research Methods: The Basics*.
- Wirat Sonchan, Pratoom Moungee, Anek Sootmongkol. 2017. "The Effects of a Circuit Training Program on Muscle Strenght, Agility, Anaerobic Performance and Cardiovascular Endurance." *International Journal of Sport and Health Science* 11(4):176–79.
- Young, Warren B. 2006. "Transfer of Strength and Power Training to Sports Performance." *International Journal of Sports Physiology and Performance* 1(2):74–83.

2. Peraturan Perundang-undangan

- Undang-Undang Republik Indonesia Nomor 3 Tahun 2005, Tentang Sistem Keolahragaan Nasional. 2005. "UNDANG-UNDANG REPUBLIK INDONESIA NOMOR 3 TAHUN 2005 TENTANG SISTEM KEOLAHRAGAAN NASIONAL." (1).

3. Sumber Internet

Wood, Robert. 2008. "Multistage Hurdle Jump Test." 1–2. Retrieved (<https://www.topendsports.com/testing/tests/multistage-hurdle.htm>).

Zaini, K. Saragih. 2017. "Seperti Ini Pola Latihan Yang Harus Dilakukan Pesepakbola Saat Libur Kompetisi." *Kompasiana*. Retrieved (<https://www.kompasiana.com/drzaini/5a23b64645480246f372ea52/model-latihan-sepakbola-bagian-1-off-season>).

<https://chrismantorowahyu.files.wordpress.com/2015/09/wor11.png>

<http://www.stackhealthy.com/wp-content/uploads/2015/05/jumpsquat.png>

<http://reps-id.com/wp-content/uploads/2014/02/lower-back-curl3.jpg>

<https://www.stack.com/a/5-ways-to-make-hurdle-hop-plyometrics-more-effective>