

## LAPORAN PENELITIAN

### **PENGARUH LATIHAN AEROBIK DAN ANAEROBIK TERHADAP AMBANG ANAEROBIK**

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#### Abstrak

Penelitian ini bertujuan untuk mengetahui: 1) Pengaruh latihan aerobik terhadap peningkatan ambang anaerobik, 2) Pengaruh latihan anaerobik terhadap ambang anaerobik, 3) Perbedaan efektivitas latihan aerobik dan anaerobik terhadap ambang anaerobik.

Penelitian ini merupakan penelitian eksperimen dengan desain Pretest – Posttest Group Design. Populasi dalam penelitian ini adalah pemain bolavoli “GARUDA” Kulonprogo yang berjumlah 21 orang putra. Sampel yang digunakan adalah seluruh populasi sehingga penelitian ini merupakan penelitian populasi. Sampel dibagi ke dalam dua kelompok eksperimen, yaitu latihan aerobik dan kelompok latihan anaerobik secara ordinal pairing. Variabel yang diteliti adalah: 1) Variabel bebas: Latihan Aerobik dan Anaerobik, 2) Variabel tergantung: Ambang anaerobik. Untuk mengetahui ambang anaerobik dites menggunakan tes lari maksimal dari Janssen (1989). Analisa data yang digunakan dalam penelitian ini adalah dengan Uji-t, dan perbedaan rerata.

Hasil penelitian untuk uji normalitas dengan Kolmogorov Smirnov, untuk latihan aerobik diperoleh harga Z hitung 0.513 P = 0.955, status sebaran normal. Sedangkan untuk latihan anaerobik diperoleh harga Z 0.625 p = 0.829, status sebaran normal. Uji Homogenitas dengan uji F diperoleh nilai F = 0.003, P = 0.959, berarti variansi kedua sampel homogen. Pengujian hipotesis terhadap kelompok eksperimen I, yaitu latihan aerobik diperoleh t hitung = -16.686, p = 0.000 yang berarti ada pengaruh yang signifikan latihan aerobik terhadap ambang anaerobik. Sedangkan terhadap kelompok eksperimen II, yaitu latihan anaerobik diperoleh t hitung = -16.754, p = 0.000 yang berarti ada pengaruh yang signifikan latihan aerobik terhadap ambang anaerobik. Latihan aerobik rata-rata Pre-test = 158,55, Post-test = 167,557, sehingga mempunyai perbedaan rerata = 9. Untuk latihan anaerobik rata-rata Pre-test = 158,80, Post-test = 163,30, sehingga mempunyai perbedaan rerata = 4,50. Dengan demikian latihan aerobik memiliki perbedaan rerata lebih besar dari latihan anaerobik, hal ini berarti bahwa latihan aerobik lebih efektif daripada latihan anaerobik terhadap kapasitas ambang anaerobik.

Kata kunci: Ambang anaerobik, latihan di lapangan

## A RESEARCH REPORT

# **THE EFFECTS OF AEROBIC AND ANAEROBIC EXERCISE TOWARDS THE ANAEROBIC THRESHOLD**

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### Abstract

This research is aimed at demonstrating: 1) the effects of aerobic exercise towards the increase of anaerobic threshold, 2) the effects of anaerobic exercise towards the anaerobic threshold, 3) the difference in effectiveness of aerobic and anaerobic exercise towards anaerobic threshold.

This is an experimental study using Pretest – Posttest Group Design. The populations involved in this study were 21 volleyball players of GARUDA from Kulonprogo regency, Yogyakarta. The samples were all players of the population so that it is categorized as population research. The samples were divided into two experimental groups which were aerobic and anaerobic groups using ordinal-pairing approach. The variables were: 1) independent variables: Aerobic and Anaerobic Exercises, 2) the dependant variable: anaerobic threshold. To determine anaerobic threshold, the researcher used running tests from Janssen (1989). The data were analyzed using T-test and mean variation.

The results of normality tests using Kolmogorov Smirnov for aerobic exercise, Z count 0.513 P = 0.955, the status of spreading was normal while Z count for anaerobic exercise was 0.625 p = 0.829, the status of spreading was normal. Homogeneity tests using F-tests resulted in F = 0.003, P = 0.959, meaning that the variance of the samples was homogenous. The hypothesis test to experimental group I which was the group of aerobic exercise resulted in t count = -16.686, p = 0.000 which implied that there was significant influence of aerobic exercise towards anaerobic threshold and one to experimental group II which was the group of aerobic exercise resulted in t count = -16.754, p = 0.000 which implied that there was significant influence of aerobic exercise towards anaerobic threshold. The mean pre-test was 58.55, Post-test was 167.557, so that the mean difference was 9. For the anaerobic exercise, the mean of Pre-test was 158.80 and Post-test was 163,30, so that the mean difference was 4.50. Thus, the aerobic exercise had bigger mean differences than anaerobic exercise which implies that aerobic exercise was more effective than anaerobic in relation to the capacity of anaerobic threshold.

Keywords: Anaerobic threshold, field exercise