

**DAMPAK LATIHAN DAN DIET TERHADAP RISIKO SINDROM  
METABOLIK**

**DISERTASI**

Diajukan untuk memenuhi Sebagian syarat untuk memperoleh gelar Doktorat  
Pendidikan Olahraga



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**PROGRAM STUDI  
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**DAMPAK MODEL LATIHAN DAN DIET TERHADAP RISIKO  
SINDROM METABOLIK**

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## **Pernyataan Keaslian Disertasi**

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Bandung, Agustus 2022



Reshandi Nugraha

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Bandung, Agustus 2022



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## ABSTRAK

### **Dampak Latihan dan Diet Terhadap Risiko Sindrom Metabolik**

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Sindrom metabolik merupakan sekelompok gangguan kesehatan yang terjadi secara bersamaan, meliputi tiga dari lima komponen yaitu Trigliserida, HDL, Gula Darah, Lingkar Pinggang, dan Tekanan Darah melebihi nilai batas normal. Risiko sindrom metabolik secara tidak disadari dapat terjadi pada seseorang yang mengalami kenaikan berat badan yang didominasi oleh lemak. Penelitian ini bertujuan untuk mengetahui dampak latihan dan diet terhadap risiko sindrom metabolik. Metode penelitian yang digunakan pada penelitian ini yaitu penelitian eksperimen dengan desain faktorial 3x2, model latihan sebagai variabel bebas yang terdiri atas 3 klasifikasi yaitu latihan aerobik, latihan anaerobik, dan latihan gabungan, sedangkan diet sebagai variabel moderator yang terdiri dari dua klasifikasi yaitu pembatasan kalori dan non pembatasan kalori. Variabel terikat dalam penelitian ini yaitu sindrom metabolik diantaranya meliputi HDL, LDL, kolesterol total, trigliserida, tekanan darah, lingkar pinggang, dan kadar gula darah. Terdapat enam kelompok eksperimen yang diantaranya mendapatkan perlakuan latihan aerobik dan pembatasan kalori (A1B1), latihan anaerobik dan pembatasan kalori (A2B1), latihan gabungan dan pembatasan kalori (A3B1), Latihan aerobik dan non diet (A1B2), latihan anaerobik dan non diet (A2B2), latihan gabungan dan non diet (A3B2). Analisis data dalam penelitian ini menggunakan analisis statistik anava dua jalur. Hasil dari penelitian ini menunjukkan bahwa terdapat perbedaan pengaruh latihan terhadap penurunan risiko sindrom metabolik, terdapat perbedaan pengaruh diet terhadap penurunan resiko sindrom metabolik, terdapat interaksi antara latihan dengan diet yang memberikan pengaruh terhadap penurunan risiko sindrom metabolik. Latihan gabungan paling berpengaruh secara signifikan terhadap penurunan risiko sindrom metabolik dibandingkan latihan aerobik dan latihan beban, diet pembatasan kalori lebih berpengaruh terhadap penurunan risiko sindrom metabolik dibandingkan non diet, dan terdapat interaksi latihan dan diet yang memberikan pengaruh terhadap penurunan risiko sindrom metabolik. Untuk mencegah maupun mengobati sindrom metabolik dapat menerapkan latihan yang dikombinasikan dengan diet, namun untuk mendapatkan hasil yang optimal dalam menurunkan risiko sindrom metabolik dapat menerapkan latihan gabungan dan pembatasan kalori.

## ABSTRACT

### **Impact of Exercise and Diet on the Risk of Metabolic Syndrome**

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A metabolic syndrome is a group of health disorders that coincide, including three of the five components: triglycerides, HDL, Blood Sugar, Waist Circumference, and Blood Pressure exceeding average limit values. The risk of metabolic syndrome can unconsciously occur in someone who experiences weight gain dominated by fat. This study aims to determine the impact of exercise and diet on the risk of metabolic syndrome. The research method used in this study is an experimental study with a 3x2 factorial design, the exercise model as an independent variable consisting of 3 classifications, namely aerobic exercise, anaerobic exercise, and combined exercise, while diet as a moderating variable consists of two classifications, namely calorie restriction, and exercise. Non-calorie restriction. The dependent variable in this study is metabolic syndrome, including HDL, LDL, total cholesterol, triglycerides, blood pressure, waist circumference, and blood sugar levels. There were six experimental groups which included aerobic exercise and calorie restriction (A1B1), anaerobic exercise and calorie restriction (A2B1), combined exercise and calorie restriction (A3B1), aerobic exercise and non-diet (A1B2), anaerobic and non-dietary exercise ( A2B2), combined exercise and non-diet (A3B2). Data analysis in this study used two-way ANOVA statistical analysis. The results of this study indicate that there are differences in the effect of exercise on reducing the risk of metabolic syndrome, there are differences in the effect of diet on reducing the risk of metabolic syndrome, and there is an interaction between exercise and diet that affects reducing the risk of metabolic syndrome. Combined exercise has the most significant effect on reducing the risk of metabolic syndrome compared to aerobic exercise and weight training, calorie restriction diet is more influential in reducing the risk of metabolic syndrome than non-diet, and there is an interaction between exercise and diet that affects reducing the risk of metabolic syndrome. To prevent or treat metabolic syndrome, one can apply exercise combined with diet, but to get optimal results in reducing the risk of metabolic syndrome can apply combined exercise and calorie restriction.

## DAFTAR ISI

	Halaman
<b>LEMBAR PENGESAHAN</b>	i
<b>PERNYATAAN KEASLIAN DAN BEBAS PLAGIARISME</b>	ii
<b>UCAPAN TERIMA KASIH</b>	iii
<b>ABSTRAK</b>	v
<b>DAFTAR ISI</b>	vii
<b>DAFTAR TABEL</b>	ix
<b>DAFTAR GAMBAR</b>	x
<b>DAFTAR LAMPIRAN</b>	xi
<b>BAB I PENDAHULUAN</b>	
1.1. Latar Belakang.....	1
1.2. Identifikasi Masalah.....	7
1.3. Rumusan Masalah.....	7
1.4. Tujuan Penelitian.....	8
1.5. Manfaat Penelitian.....	8
1.6. Struktur Organisasi Disertasi.....	9
<b>BAB II KAJIAN PUSTAKA</b>	
2.1. Konsep Latihan.....	11
2.1.1. Latihan Aerobik.....	12
2.1.2. Latihan Anaerobik.....	14
2.1.3. Latihan Gabungan.....	16
2.2. Mekanisme Produksi Energi Selama Latihan.....	18
2.3. Kesehatan dan Kebugaran.....	21
2.3.1. Kebugaran yang Berhubungan dengan Kesehatan.....	23
2.3.2. Kebugaran yang Berhubungan dengan Performa.....	24
2.4. Nutrisi dan Diet.....	25
2.4.1. Nutrisi.....	25
2.4.2. Makronutrien.....	26
2.4.3. Mikronutrien.....	29
2.4.4. Diet Pembatasan Kalori.....	30
2.5. Sindrom Metabolik.....	31
2.5.1. <i>Abdominal Obesity</i> .....	35
2.5.2. Dislipidemia Resistensi Insulin.....	36
2.5.3. Hipertensi.....	39
2.5.4. <i>Hyperglycemia</i> .....	40
2.5.5. Epidemiologi dan Mekanisme Hiperglikemia.....	41
2.5.6. Kerusakan Jaringan yang Diinduksi Hiperglikemia.....	42
2.6. Obesitas dan Resiko Penyakit.....	44



2.6.1. Diabetes Militus.....	44
2.6.2. Penyakit Kardiovaskular.....	46
2.6.3. Sindrom Metabolik.....	48
2.6.4 Kanker.....	48
2.6.5. Penyakit Kantung Empedu.....	49
2.6.6. Pankreatitis Akut.....	49
2.6.7 Penyakit Hati Berlemak.....	49
2.6.8. Depresi.....	50
2.7 Penelitian Relevan.....	50
2.8 Kerangka Berpikir.....	52
2.9 Hipotesis Penelitian.....	59
<b>BAB III METODE PENELITIAN</b>	
3.1. Metode Penelitian dan Desain Penelitian.....	61
3.3. Populasi dan Sampel.....	63
3.3.1. Populasi.....	63
3.3.2. Sampel .....	64
3.3. Partisipan.....	65
3.4. Instrumen Penelitian.....	67
3.5. Prosedur Penelitian.....	70
3.5. Analisis Data.....	73
<b>BAB IV TEMUAN DAN PEMBAHASAN</b>	
4.1. Temuan Penelitian.....	77
4.2. Pembahasan.....	92
<b>BAB V SIMPULAN, IMPLIKASI, DAN REKOMENDASI</b>	
5.1. Simpulan.....	99
5.2. Implikasi.....	100
5.3. Rekomendasi.....	100
<b>DAFTAR PUSTAKA</b>	<b>101</b>
<b>LAMPIRAN</b>	<b>130</b>

## DAFTAR TABEL

	Halaman
2.1. Ringkasan Definisi Sindrom Metabolik.....	34
2.2. Risiko Masalah Kesehatan Terkait Obesitas.....	36
2.3. Matriks Perbedaan Latihan Aerobik, Anaerobik, dan Gabungan.....	52
3.1. Rancangan Analisis Desain Faktorial 3x2.....	62
3.2. Jumlah Populasi.....	64
3.3. Jumlah Sampel Representatif.....	64
4.1. Variabel Demografi.....	77
4.2. Rata-rata Gain Skor Komponen Sindrom Metabolik.....	78
4.3. T-Skor Sindrom Metabolik.....	79
4.4. Data Deskriptif.....	80
4.5. Uji Normalitas.....	82
4.6. Uji Homogenitas.....	83
4.7. Uji Anova.....	84
4.8. <i>Multiple Comparisons</i> Latihan.....	85
4.9. Uji Tukey Latihan dalam Kondisi Pembatasan kalori.....	89
4.10. Uji Tukey Latihan dalam Kondisi Non Diet.....	91

## DAFTAR GAMBAR

	Halaman
2.1. Proses Metabolisme Aerobik.....	13
2.2. Kontribusi Tiga Sistem Energi.....	16
2.3. Representasi Umum Jalur Bioenergi.....	19
2.4. Metabolisme Protein, Karbohidrat, dan Lemak.....	20
2.5. Model Patologis Obesitas.....	36
2.6. Dislipidemia pada Sindrom Metabolik.....	37
2.7. Patogenesis Hipertensi pada Sindrom Metabolik.....	39
2.8. Mekanisme Hiperglikemia.....	40
2.9. Proses Kerusakan Jaringan Akibat Hiperglikemia.....	43
2.10. Perbedaan Proses Metabolisme Energi.....	54
2.11. Kontribusi Latihan dan Diet terhadap Sindrom Metabolik .....	56
2.12. Kontribusi Latihan dengan Pembatasan Kalori.....	56
2.13. Kontribusi Latihan tanpa Diet.....	57
3.1. Alur Partisipan.....	67
3.2. Omron Tensi Meter.....	68
3.3. <i>Waist Rulled</i> .....	68
3.4. Perfect Health.....	69
3.5. Meteran.....	69
3.6. Alur Penelitian.....	70
4.1. Rata-rata Gain Skor.....	79
4.2. Boxplot Pengaruh Latihan Terhadap Sindrom Metabolik.....	85
4.3. Interaksi antara Model Latihan dengan Diet.....	85
4.4. Boxplot Perbedaan Rata-rata Latihan dan Diet.....	88

## DAFTAR LAMPIRAN

	Halaman
1. Program Latihan Aerobik Interval Sepeda Statis.....	130
2. Program Latihan Beban.....	136
3. Program Latihan Gabungan.....	144
4. Gerakan Latihan beban.....	156
5. Hasil Posttest Sindrom Metabolik.....	175
6. Hasil Pretest Sindrom Metabolik.....	178
7. T Skor Rata-rata Sindrom Metabolik.....	181
8. Hasil Uji Data Deskriptif.....	182
9. Hasil Uji Normalitas.....	183
10. Hasil Uji Homogenitas.....	184
11. Hasil Uji Anova Dua Jalur.....	185
12. Hasil Uji Tukey.....	186
13. Surat Keterangan Penelitian.....	188
14. Persetujuan Etik.....	189
15. Form Kesiediaan Sebagai Partisipan.....	190
16. Dokumentasi Penelitian.....	191
17. Artikel Penelitian.....	197
18. Riwayat Hidup Penulis.....	213

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