

ABSTRAK

Efek Perbedaan Intensitas Latihan *Resistance Elastic Band* terhadap Profil Lipid pada Wanita Hiperkolesterolemia

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Latar belakang: Penyakit jantung koroner (PJK) menjadi penyebab utama kematian di Amerika Serikat. Hiperkolesterolemia terbukti menjadi faktor risiko mayor PJK. IL-6, IL-15, dan irisin merupakan miokin yang diinduksi oleh latihan *resistance* dapat memperbaiki profil lipid. Penelitian ini bertujuan untuk menganalisis efek perbedaan intensitas latihan *resistance elastic band* terhadap profil lipid pada wanita hiperkolesterolemia.

Metode: Desain penelitian adalah *pretest-posttest control group design* dengan total 40 subjek wanita dewasa hiperkolesterolemia. Subjek dibagi ke dalam empat kelompok yaitu latihan *resistance* intensitas rendah, intensitas sedang, intensitas tinggi, dan kontrol. Latihan *resistance* terdiri dari tiga jenis latihan untuk ekstremitas atas dan tiga jenis latihan untuk ekstremitas bawah yang masing-masing terdiri dari tiga set, 12 repetisi dan satu menit interval istirahat yang diberikan sebanyak tiga kali setiap minggu selama empat minggu. Darah untuk analisis profil lipid dikumpulkan melalui pengambilan darah vena sebelum dan setelah intervensi.

Hasil: Latihan *resistance* intensitas rendah menurunkan kolesterol total ($p=0,05$), kolesterol LDL ($p=0,24$), dan trigliserida ($p=0,04$). Latihan *resistance* intensitas sedang menurunkan kolesterol total ($p=0,00$), kolesterol LDL ($p=0,01$), dan trigliserida ($p=0,01$). Latihan *resistance* intensitas tinggi menurunkan kolesterol total ($p=0,00$), kolesterol LDL ($p=0,01$), trigliserida ($p=0,15$), dan meningkatkan kolesterol HDL ($p=0,56$).

Kesimpulan: Latihan *resistance elastic band* menurunkan kolesterol total, kolesterol LDL, dan trigliserida terutama intensitas sedang dan intensitas tinggi namun tidak dapat meningkatkan kolesterol HDL.

Kata kunci: hiperkolesterolemia, intensitas latihan, latihan *resistance*, perbaikan profil lipid

ABSTRACT

**Effect of Differences Intensity Elastic Band Resistance Exercise
on Lipid Profile in Women Hypercholesterolemia**

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Background: Coronary heart disease (CHD) is a major cause of death in United States. Hypercholesterolemia has proven to be a major risk factor of CHD. Myokine such as IL-6, IL-15, and irisin are induced by resistance exercise and act systemically to improve lipid profile. The aim of this study is to analyze the effect of intensity of elastic band resistance exercise on lipid profile in women hypercholesterolemia.

Materials and Methods: This study was pretest-posttest control group design with 40 adult women hypercholesterolemia. The subjects were divided into four treatments - low intensity, moderate intensity, high intensity, and control. Resistance exercise consists of three types of exercise for upper extremities and three types of exercise for lower extremities, each set consisting of three sets, 12 repetitions, and one minute of rest interval between exercises given three times every week for four weeks. The blood for analyzing lipid profile were collected from vena before and after intervention.

Results: Low intensity resistance exercise decreased total cholesterol ($p=0.05$), LDL-C ($p=0.24$), triglyceride ($p=0.04$). Moderate intensity decreased total cholesterol ($p=0.00$), LDL-C ($p=0.01$), triglyceride ($p=0.01$). High intensity decreased total cholesterol ($p=0.00$), LDL-C ($p=0.01$), triglyceride ($p=0.15$), and increased HDL-C ($p=0.56$).

Conclusions: Resistance exercise has beneficial health effect on lowering total cholesterol, LDL-C, triglyceride especially moderate intensity and high intensity but did not lead to a significant increase in HDL-C.

Key words: hypercholesterolemia, intensity of exercise, resistance exercise, improvement of lipid profile