

**HUBUNGAN MASSA BEBAS LEMAK DAN LAJU METABOLIK BASAL
DENGAN *HANDGRIP STRENGTH* MAHASISWA FAKULTAS
KEDOKTERAN UNIVERSITAS PEMBANGUNAN NASIONAL
“VETERAN” JAKARTA TAHUN 2023**

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ABSTRAK

Handgrip strength merupakan indikator menguji kekuatan otot dan dianggap sebagai prediktor sarcopenia atau hilangnya massa otot. Massa otot merupakan penyusun massa bebas lemak. Massa bebas lemak sebagai penentu utama laju metabolik basal. Massa bebas lemak dan laju metabolik basal merupakan indikator kesehatan dan kebugaran fisik. Mahasiswa kedokteran cenderung memiliki pola hidup yang menyebabkan penurunan kekuatan otot sehingga dapat meningkatkan faktor risiko penyakit kardiovaskular, sindrom metabolik, diabetes mellitus tipe 2, dan sarcopenia. Penelitian ini bertujuan untuk mengetahui hubungan massa bebas lemak dan laju metabolik basal dengan *handgrip strength* mahasiswa Fakultas Kedokteran Universitas Pembangunan Nasional “Veteran” Jakarta tahun 2023. Penelitian menggunakan desain potong lintang, besar sampel 54 mahasiswa sesuai kriteria penelitian, dan dengan teknik *purposive sampling*. *Handgrip strength* diukur menggunakan *handgrip dynamometer*. Massa bebas lemak dan laju metabolik basal diukur menggunakan *Bioelectrical Impedance Analysis* (BIA). Hasil uji *Independent sample t-test* menunjukkan tidak terdapat perbedaan berdasarkan massa bebas lemak antara responden *handgrip strength* rendah dan *handgrip strength* ($p = 0,662$). Hasil uji *Chi-square* menunjukkan terdapat hubungan antara laju metabolik basal dengan *handgrip strength* ($p = 0,001$; OR = 16,875). Mahasiswa fakultas kedokteran perlu menjaga performa aktivitas, melatih kekuatan otot, dan menerapkan pola hidup sehat sehingga *handgrip strength*, massa bebas lemak, dan laju metabolik basal tetap terjaga.

Kata Kunci: *Handgrip Strength*, Laju Metabolik Basal, Massa Bebas Lemak

THE RELATIONSHIP OF FAT FREE MASS AND BASAL METABOLIC RATE WITH HANDGRIP STRENGTH MEDICAL STUDENTS OF PEMBANGUNAN NASIONAL "VETERAN" JAKARTA UNIVERSITY IN 2023

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ABSTRACT

Hand grip strength is an indicator that tests muscle strength and is considered a predictor of sarcopenia or loss of muscle mass. Muscle mass is a constituent of fat-free mass (FFM) and FFM is the main determinant of basal metabolic rate (BMR). Medical students tend to have a lifestyle that causes a decrease in muscle strength, which can increase risk factors for cardiovascular disease, metabolic syndrome, type 2 diabetes mellitus, and sarcopenia. This study aims to determine the relationship between fat-free mass and basal metabolic rate with grip strength of students at the Faculty of Medicine, University of Pembangunan Nasional "Veteran" Jakarta in 2023. The research used a cross-sectional design, sample size was 54 students according to the research criteria, and purposive sampling technique. Handgrip strength was measured using a handgrip dynamometer. Fat free mass and basal metabolic rate were measured using Bioelectrical Impedance Analysis (BIA). The results of the Independent sample t-test showed that there was no significant difference based on fat-free mass between respondents with low hand grip strength and low hand grip strength ($p = 0.662$). The results of the Chi-square test showed that there was a significant relationship between basal metabolic rate and hand grip strength ($p = 0.001$; OR = 16.875). Medical faculty students need to maintain activity performance, train muscle strength, and adopt a healthy lifestyle so that handgrip strength, fat-free mass, and basal metabolic rate are maintained.

Keywords : *Handgrip Strength, Basal Metabolic Rate, Fat Free Mass*