

**FAKULTAS KEDOKTERAN  
UNIVERSITAS PEMBANGUNAN NASIONAL “VETERAN” JAKARTA**

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**HUBUNGAN MASSA OTOT, ASUPAN NUTRISI, GULA DARAH PUASA,  
DAN OBESITAS SENTRAL TERHADAP *HANDGRIP STRENGTH* PADA  
MAHASISWA FAKULTAS KEDOKTERAN UPNVJ TAHUN 2023**

RINCIAN HALAMAN (x + 72 halaman, 15 tabel, 6 gambar, 10 lampiran)

**ABSTRAK**

**Tujuan**

Otot berperan dalam membuat gerakan, stabilisasi postur tubuh, dan regulasi suhu tubuh. Kekuatan otot dapat dinilai dengan metode *handgrip strength*. *Handgrip strength* dapat memprediksi fungsi otot, status gizi, risiko diabetes, dan penyakit kardiovaskular. *Handgrip strength* dapat dipengaruhi oleh massa otot, asupan nutrisi, massa lemak, tingkat aktivitas fisik, dan komor. Tujuan penelitian ini untuk melihat hubungan antara massa otot, asupan nutrisi, gula darah puasa, dan obesitas sentral dengan *handgrip strength* pada mahasiswa FK UPNVJ.

**Metode**

Penelitian dilakukan dengan desain *cross sectional* dengan metode analitik observasional. Sampel berjumlah 53 orang yang diambil dengan teknik *purposive sampling*. Pengukuran *handgrip strength* menggunakan *hand dynamometer*, asupan nutrisi menggunakan *food recall 2x24 jam*, massa otot menggunakan *body composition analyzer*, obesitas sentral menggunakan *waist to hip ratio*, dan gula darah puasa menggunakan glukometer. Analisis data menggunakan uji *chi-square* dan *independent T test*.

**Hasil**

Hasil analisis bivariat didapatkan terdapat hubungan antara obesitas sentral dengan *handgrip strength* ( $p = 0,006$ ) dan tidak terdapat hubungan antara *handgrip strength* dengan massa otot ( $p = 0,869$ ), asupan energi ( $p = 235$ ), asupan protein ( $p = 0,524$ ), dan gula darah puasa ( $p = 0,272$ ).

**Kesimpulan**

Berdasarkan hasil penelitian didapatkan hubungan antara obesitas sentral dengan *handgrip strength*, namun tidak terdapat hubungan antara massa otot, asupan energi, asupan protein, dan gula darah puasa dengan *handgrip strength*. *Handgrip strength* banyak dipengaruhi oleh faktor lainnya seperti BMI, aktivitas fisik, komorbiditas, serta antropometri tangan. Pembaca diharapkan dapat merubah pola hidup menjadi lebih baik agar terhindar dari kelemahan otot.

**Daftar Pustaka** : 114 (2010-2023)

**Kata Kunci** : *Handgrip strength*, Massa Otot, Gula Darah Puasa, Asupan Nutrisi, Obesitas Sentral

**FACULTY OF MEDICINE  
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**Undergraduate Thesis, December 2023**

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***RELATION BETWEEN MUSCLE MASS, NUTRITION INTAKE, FASTING BLOOD GLUCOSE, AND CENTRAL OBESITY WITH HANDGRIP STRENGTH IN EARLY ADULT***

PAGE DETAIL (x + 72 pages, 15 tables, 6 pictures, 10 appendices)

**ABSTRACT**

**Objective**

Muscles are responsible for movement, posture, and thermoregulation. Handgrip strength is a reliable indicator to evaluate muscle strength and can predict muscle function, nutritional status, diabetes risk, and cardiovascular risk. Factors that affect hand grip strength include muscle mass, nutritional intake, fat mass, physical activity level, and metabolic syndrome.

**Method**

The research was conducted with a cross sectional design with observational analytical methods. A study conducted with 53 participants using a purposive sampling technique. Hand grip strength can be measured using a hand dynamometer, nutritional intake using a 2x24 hour food recall, muscle mass using a body composition analyzer, central obesity using waist to hip ratio, and fasting blood sugar using a glucometer. Analysis bivariate used chi- square test and independent test.

**Result**

Bivariate analysis results showed relationship between central obesity and handgrip strength ( $p = 0,006$ ), but no relation between handgrip strength and muscle mass ( $p = 0,869$ ), energy intake ( $p = 0,235$ ), protein intake ( $p = 0,524$ ), and fasting blood glucose ( $0,272$ ).

**Conclusion**

Based on result there was a relationship between central obesity and handgrip strength, but there is no relationship between muscle mass, nutritional intake, protein intake, and fasting blood sugar with handgrip strength. Factors that effect hand grip strength not only central obesity, but also other factor that not seen in this research, like body mass index, physical activity, comorbidities, and hand anthropometry. Future research should consider other factors such as physical activity, muscle mass index, and comorbidities .

**Reference** : 114 (2010-2023)

**Keywords** : Handgrip strength, Muscle Mass, Fasting Blood Sugar, Nutritional Intake, Central Obesity