

ABSTRAK

HUBUNGAN INDEKS MASSA TUBUH DAN DIAMETER SAGITAL ABDOMEN DENGAN FLEKSIBILITAS OTOT PADA MAHASISWA UNIVERSITAS GADJAH MADA

Ghina Nabila Imtiyaz¹, Neni Trilusiana Rahmawati², Nurina Umy Habibah²

Latar belakang: Fleksibilitas otot merupakan salah satu indikator kebugaran jasmani yang penting dalam menjaga fungsi muskuloskeletal serta mencegah risiko cedera dan nyeri, khususnya pada area punggung bawah. Populasi usia produktif, termasuk mahasiswa, rentan mengalami penurunan fleksibilitas akibat pola hidup sedentari dan aktivitas fisik yang rendah. Status gizi, khususnya akumulasi lemak tubuh, berpotensi memengaruhi fleksibilitas melalui penurunan kekuatan otot dan keterbatasan rentang gerak sendi. Namun, penggunaan indeks massa tubuh (IMT) sebagai indikator status gizi memiliki keterbatasan sehingga pengukuran diameter sagital abdomen (DSA) diperlukan untuk menilai kontribusi lemak visceral terhadap fleksibilitas otot secara lebih spesifik.

Tujuan: Mengetahui hubungan antara indeks massa tubuh dan diameter sagital abdomen dengan fleksibilitas otot pada mahasiswa Universitas Gadjah Mada.

Metode: Penelitian observasional analitik dengan desain *cross-sectional* pada mahasiswa Universitas Gadjah Mada berusia 18 – 25 tahun. Pengumpulan data dilakukan di Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan Universitas Gadjah Mada menggunakan teknik *consecutive sampling* dengan total subjek berjumlah 179 mahasiswa yang memenuhi kriteria inklusi dan eksklusi. Instrumen berupa timbangan manual, antropometer, *large spreading caliper*, tes duduk raih (*sit and reach test*), dan *Internasional Physical Activity Questionnaire – Short Form* (IPAQ SF). Analisis data menggunakan uji korelasi *Fisher Exact* ($p < 0,05$) untuk mengetahui hubungan variabel bebas dan variabel perancu dengan variabel terikat.

Hasil: Hasil analisis menunjukkan bahwa tidak terdapat korelasi yang signifikan antara indeks massa tubuh (IMT) dan diameter sagital abdomen (DSA) dengan fleksibilitas otot punggung bawah dan *hamstring* yang diukur menggunakan metode *sit and reach* ($p = 0,761$; $p = 0,824$). Selain itu, variabel perancu jenis kelamin dan tingkat aktivitas fisik juga tidak menunjukkan hubungan yang bermakna dengan fleksibilitas otot punggung bawah dan *hamstring* ($p = 0,536$; $p = 0,328$).

Kesimpulan: Tidak terdapat hubungan antara indeks massa tubuh, diameter sagital abdomen, jenis kelamin, dan tingkat aktivitas fisik dengan fleksibilitas otot pada mahasiswa Universitas Gadjah Mada.

Kata kunci: Indeks Massa Tubuh; Diameter Sagital Abdomen; Fleksibilitas; Mahasiswa.

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- 1) Mahasiswa Program Studi Gizi, Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan Universitas Gadjah Mada
 - 2) Dosen Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan Universitas Gadjah Mada

ABSTRACK

THE RELATIONSHIP BETWEEN BODY MASS INDEX AND ABDOMINAL SAGITTAL DIAMETER WITH MUSCLE FLEXIBILITY IN GADJAH MADA UNIVERSITY STUDENTS

Ghina Nabila Imtiyaz¹, Neni Trilusiana Rahmawati², Nurina Umy Habibah²

Background: Muscle flexibility is an important indicator of physical fitness in maintaining musculoskeletal function and preventing the risk of injury and pain, particularly in the lower back area. The productive age population, including college students, is vulnerable to decreased flexibility due to a sedentary lifestyle and low physical activity. Nutritional status, particularly body fat accumulation, has the potential to impact flexibility through decreased muscle strength and limited joint range of motion. However, the use of body mass index (BMI) as an indicator of nutritional status has limitations, so measuring the sagittal abdominal diameter (SAD) is necessary to more specifically assess the contribution of visceral fat to muscle flexibility.

Objective: To determine the relationship between body mass index and sagittal abdominal diameter with muscle flexibility in Gadjah Mada University students.

Methods: This was an analytical observational study with a cross-sectional design among Gadjah Mada University students aged 18-25 years. Data collection was conducted at the Faculty of Medicine, Public Health, and Nursing, Gadjah Mada University using consecutive sampling techniques with a total of 179 students who met the inclusion and exclusion criteria. Instruments included manual scales, anthropometers, large spreading calipers, sit-and-reach tests, and the International Physical Activity Questionnaire – Short Form (IPAQ SF). Data analysis used the Fisher Exact's correlation test ($p < 0.05$) to determine the relationship between independent variables and confounding variables with the dependent variable.

Results: The analysis results showed no significant correlation between body mass index (BMI) and sagittal abdominal diameter (SAD) with lower back and hamstring muscle flexibility measured using the sit and reach method ($p = 0.761$; $p = 0.824$). Furthermore, confounding variables gender and physical activity level also showed no significant relationship with lower back and hamstring muscle flexibility ($p = 0.536$; $p = 0.328$).

Conclusion: There was no relationship between body mass indeks, abdominal saggital diameter, gender, and level of physical activity with muscle flexibility in Gadjah Mada University students.

Keywords: Body Mass Index; Sagittal Abdominal Diameter; Flexibility; Students.

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- 1) Student of Nutrition Study Program, Faculty of Medicine, Public Health, and Nursing, Gadjah Mada University
 - 2) Lecturer at the Faculty of Medicine, Public Health, and Nursing, Gadjah Mada University