

## ABSTRAK

**Latar Belakang:** Obesitas sentral dapat mengakibatkan hipertensi. Indeks pergelangan tangan (IPT) dan rasio lingkaran pinggang-pinggul (RLPP) adalah indikator obesitas sederhana yang dapat digunakan untuk mengidentifikasi hipertensi.

**Tujuan:** Untuk mengkaji hubungan IPT, RLPP, dan tekanan darah, serta mengetahui perbedaan IPT, RLPP, dan tekanan darah pada mahasiswa laki-laki dan perempuan di Daerah Istimewa Yogyakarta.

**Metode:** Penelitian observasi *cross sectional* dilakukan pada September-Desember 2014 dengan 232 mahasiswa (93 laki-laki dan 146 perempuan) di Universitas Gadjah Mada dan Universitas Teknologi Yogyakarta. Subjek diukur tinggi badan, lingkaran pergelangan tangan, lingkaran pinggang, dan lingkaran pinggul dengan metode yang dipublikasi oleh *International Society for the Advancement of Kinanthropometry* (ISAK) serta pengukuran tekanan darah. Analisis data menggunakan *independent sample t-test*, *simple linear regression*, *chi square*, *odds ratio*, tes korelasi Pearson dan Spearman.

**Hasil:** Pada kelompok laki-laki, terdapat korelasi signifikan antara IPT dan diastolik ( $r=-0.26, p<0.05$ ); RLPP dan sistolik ( $r=0.25, p<0.05$ ); RLPP dan diastolik ( $r=0.26, p<0.05$ ) dengan rerata IPT laki-laki ( $10.38, p<0.01$ ); RLPP ( $0.81, p<0.01$ ); sistolik ( $113.13\text{mmHg}, p<0.01$ ); diastolik ( $77.39\text{mmHg}, p<0.01$ ). Pada kelompok perempuan, tidak terdapat korelasi signifikan dengan rerata IPT perempuan ( $10.83, p<0.01$ ); RLPP ( $0.72, p<0.01$ ); sistolik ( $102.63\text{mmHg}$ ); diastolik ( $69.07\text{mmHg}$ ). Terdapat perbedaan signifikan antara rerata IPT ( $0.45, p<0.01$ ); RLPP ( $0.09, p<0.01$ ); sistolik ( $10.5, p<0.01$ ); dan diastolik ( $8.32, p<0.01$ ) pada kelompok laki-laki dan perempuan.

**Kesimpulan:** Pada kelompok mahasiswa laki-laki, hubungan IPT dan diastolik signifikan negatif; hubungan RLPP dengan sistolik dan diastolik signifikan positif. Pada kelompok perempuan, tidak terdapat hubungan signifikan antara IPT, RLPP, dan tekanan darah. Rerata RLPP, sistolik, dan diastolik kelompok laki-laki lebih besar daripada perempuan, sedangkan rerata IPT perempuan lebih besar daripada kelompok laki-laki.

**Kata Kunci:** indeks pergelangan tangan; lingkaran pergelangan tangan; rasio lingkaran pinggang-pinggul; tekanan darah; obesitas

## ABSTRACT

**Background:** Central obesity related to hypertension. Wrist index (WI) and waist-to-hip ratio (WHR) is a simple obesity indicator that can be used to identify hypertension as a risk factor for cardiovascular disease.

**Objectives:** To assess the relationship between WI, WHR and blood pressure, and also to determine difference of WI, WHR, and blood pressure between male and female students in Yogyakarta.

**Methods:** The study was conducted in September-December 2014 with 232 subjects consist of 93 male and 146 female at Gadjah Mada University and University of Technology Yogyakarta. Subjects were measured height, wrist circumference, waist circumference, and hip circumference with methods which were published by International Society for the Advancement of Kinanthropometry (ISAK) and also blood pressure measurement. Analysis of data used independent sample t-test, simple linear regression, chi square, odds ratio, Pearson's and Spearman's correlation test

**Results:** In male group, there are significant correlation between WI and diastolic ( $r=-0.26, p<0.05$ ); WHR and systolic ( $r=0.25, p<0.05$ ); WHR and diastolic ( $r=0.26, p<0.05$ ) with average WI (10.38,  $p<0.01$ ); WHR (0.81,  $p<0.01$ ); systolic (113.13,  $p<0.01$ ); diastolic (77.39,  $p<0.01$ ). In female student, there were no significant correlation with average WI (10.83,  $p<0.01$ ); WHR (0.72,  $p<0.01$ ); systolic (102.63mmHg); diastolic (69.07mmHg). There were significant mean differences between WI (0.45,  $p<0.01$ ), WHR (0.09,  $p<0.01$ ); systolic (10.5,  $p<0.01$ ), and diastolic (8.32,  $p<0.01$ ) in male and female students.

**Conclusions:** In male students, correlation between WI and diastolic were significantly negative; correlation between WHR with systolic and diastolic were significantly positive. In female students, there were no significant correlation between WI, WHR, and blood pressure. The mean of WHR and blood pressure among male was higher than female, while female's WI was greater than male's students.

**Keywords:** wrist index; wrist circumference; waist-to-hip ratio; blood pressure; obesity