

ABSTRAK

Chelsa Putri Wana Laia: Perbedaan Tekanan Darah Berdasarkan Frekuensi Konsumsi Minuman Berkafein dan Kualitas Tidur Pada Mahasiswa Universitas Negeri Medan. Skripsi. Fakultas Teknik Universitas Negeri Medan. 2026.

Tekanan darah merupakan indikator penting kesehatan kardiovaskular yang perlu diperhatikan untuk mencegah terjadinya penyakit tidak menular. Prevalensi hipertensi di Indonesia usia ≥ 15 tahun mencapai 29,2%. Peningkatan tekanan darah pada usia muda berpotensi menjadi faktor risiko terhadap kejadian hipertensi di usia yang lebih tua. Perubahan tekanan darah dipengaruhi berbagai faktor, termasuk frekuensi konsumsi minuman berkafein dan kualitas tidur. Penelitian ini bertujuan untuk menganalisis perbedaan tekanan darah berdasarkan frekuensi konsumsi minuman berkafein dan kualitas tidur pada mahasiswa Universitas Negeri Medan.

Penelitian dilaksanakan pada bulan Juli sampai dengan Agustus 2025 di Universitas Negeri Medan. Penelitian menggunakan desain *Cross-Sectional* dengan pendekatan kuantitatif. Populasi penelitian adalah mahasiswa Universitas Negeri Medan yang berusia 19-24 Tahun. Teknik pengambilan sampel yang digunakan adalah *proportionated stratified random sampling* dan *accidental sampling*, dengan jumlah sampel sebanyak 111 mahasiswa. Data dikumpulkan menggunakan kuesioner FFQ (*Food Frequency Quotionnaire*), kuesioner PSQI (*Pittsburgh Sleep Quality Index*), dan pengukuran tekanan darah dengan tensimeter digital (*sphygmomanometer*). Data dianalisis secara univariat, serta multivariat dengan uji analisis MANOVA (*Multivariate Analysis of Variance*).

Hasil penelitian menunjukkan bahwa sebagian besar responden memiliki frekuensi konsumsi minuman berkafein $< 3x$ /minggu (76,6%) dan kualitas tidur buruk (81,1%). Rerata tekanan darah sistolik dan diastolik responden masing-masing sebesar 110,5 mmHg dan 76,4 mmHg. Hasil uji MANOVA menunjukkan tidak terdapat perbedaan tekanan darah sistolik dan diastolik yang signifikan berdasarkan perbedaan frekuensi konsumsi minuman berkafein ($p=0,326$), sedangkan perbedaan kualitas tidur menunjukkan perbedaan yang signifikan terhadap tekanan darah sistolik dan diastolik ($p=0,026$). Interaksi antara frekuensi konsumsi minuman berkafein dan kualitas tidur juga tidak menunjukkan perbedaan tekanan darah sistolik dan diastolik yang signifikan ($p=0,420$). Kesimpulannya, terdapat perbedaan signifikan pada nilai tekanan darah sistolik dan diastolik berdasarkan tingkat kualitas tidur, sedangkan perbedaan frekuensi konsumsi minuman berkafein tidak menunjukkan perbedaan tekanan darah sistolik dan diastolik yang signifikan.

Kata Kunci: Tekanan Darah, Frekuensi Konsumsi, Minuman Berkafein, Kualitas Tidur, Mahasiswa, *Multivariate Analysis of Variance (MANOVA)*

ABSTRACT

Chelsa Putri Wana Laia: *Differences in Blood Pressure Based on the Frequency of Caffeinated Beverage Consumption and Sleep Quality Among Students at Universitas Negeri Medan. Thesis. Faculty of Engineering, State University of Medan. 2026.*

Blood pressure is an important indicator of cardiovascular health that must be monitored to prevent noncommunicable diseases. The prevalence of hypertension among Indonesians aged 15 and older is 29.2%. Elevated blood pressure at a young age can be a risk factor for developing hypertension later in life. Changes in blood pressure are influenced by various factors, including the frequency of caffeinated beverage consumption and sleep quality. This study aims to analyze differences in blood pressure based on the frequency of caffeinated beverage consumption and sleep quality among students at State University of Medan.

The study was conducted from July through August 2025 at State University of Medan. It employed a cross-sectional design with a quantitative approach. The study population consisted of students at State University of Medan aged 19–24 years. The sampling techniques used were proportionate stratified random sampling and accidental sampling, with a sample size of 111 students. Data were collected using the FFQ (Food Frequency Questionnaire), the PSQI (Pittsburgh Sleep Quality Index) questionnaire, and blood pressure measurements taken with a digital sphygmomanometer. The data were analyzed using univariate and multivariate methods, including MANOVA (Multivariate Analysis of Variance).

The results of the study show that the majority of respondents consumed caffeinated beverages less than 3 times per week (76.6%) and had poor sleep quality (81.1%). The respondents' average systolic and diastolic blood pressure readings were 110.5 mmHg and 76.4 mmHg, respectively. The results of the MANOVA test showed that there were no significant differences in systolic and diastolic blood pressure based on differences in the frequency of caffeinated beverage consumption ($p=0.326$), whereas differences in sleep quality were found to have a significant effect on systolic and diastolic blood pressure ($p=0.026$). The interaction between the frequency of caffeinated beverage consumption and sleep quality also did not show any significant differences in systolic and diastolic blood pressure ($p=0.420$). In conclusion, there were significant differences in systolic and diastolic blood pressure based on sleep quality, whereas differences in the frequency of caffeinated beverage consumption did not result in significant differences in systolic and diastolic blood pressure.

Keywords: Blood Pressure, Frequency of Consumption, Caffeinated Beverages, Sleep Quality, University Students, Multivariate Analysis of Variance (MANOVA)