ABSTRACT

Body Mass Index and Blood Pressure among Workers in Samarinda: A Cross-Sectional Study

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Background : Body mass index (BMI) is an important indicator of nutritional status and may be associated with blood pressure. Monitoring these indicators among workers can provide useful information for workplace health promotion. However, evidence on the relationship between BMI and blood pressure among workers in Samarinda remains limited. Analyzing routine medical check-up data may help identify this relationship and support occupational health planning.

Objective : To examine the association between body mass index and systolic and diastolic blood pressure among workers in Samarinda, Indonesia, using 2025 medical check-up data, and to assess the association between obesity status and elevated blood pressure.

Research Methods/ Implementation Methods : This cross-sectional study used secondary data from medical check-ups conducted in 2025 among 93 workers in Samarinda, Indonesia. BMI was categorized according to the Indonesian 2023 Health Survey criteria. Elevated blood pressure was operationally defined as systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg. Spearman's rank correlation was used to assess the relationships between BMI and systolic and diastolic blood pressure. Fisher's exact test was used to examine the association between obesity status and elevated blood pressure, with an odds ratio (OR) and 95% confidence interval (CI) reported.

Results : Among 93 workers, 41 (44.1%) were classified as obese, while 10 (10.8%) had elevated blood pressure based on the study's operational definition. BMI was positively and weakly correlated with systolic blood pressure (Spearman's rho = 0.265; p = 0.010) and diastolic blood pressure (rho = 0.295; p = 0.004). Elevated blood pressure was observed in 17.1% of workers with obesity and 5.8% of workers without obesity. However, the categorical association was not statistically significant (OR = 3.36; 95% CI: 0.81–13.93; Fisher's exact p = 0.100).

Conclusion/Lesson Learned : BMI was positively associated with both systolic and diastolic blood pressure, although the correlations were weak. The association between obesity status and elevated blood pressure was not statistically significant. These findings suggest that BMI may be relevant to workers' blood pressure profiles, but the results do not establish causality or confirm a clinical diagnosis of hypertension. Further studies with larger samples, repeated blood pressure measurements, and adjustment for potential confounding factors are warranted.

Keyword : Body mass index; Blood pressure; Occupational health; Workers; Medical check-up