ABSTRACT

Association Between BMI and Hypertension among CKG Participants at Batu Putih Public Health Center

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Background : Hypertension is a major public health concern and a modifiable risk factor for cardiovascular and renal diseases. Excess body weight is associated with hypertension, highlighting the importance of anthropometric and blood pressure assessment in primary health care.

Objective : This study aimed to determine the association between BMI and hypertension among CKG participants at Batu Putih Public Health Center, Berau.

Research Methods/ Implementation Methods : This cross-sectional study used secondary CKG data collected from January to August 2026. Of 1,018 participants, four were excluded due to incomplete blood pressure data, leaving 1,014 participants selected through total sampling. Hypertension was defined as systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg. BMI was classified as underweight (<18.5 kg/m²), normal (18.5–24.9 kg/m²), overweight (25.0–26.9 kg/m²), and obesity (≥27.0 kg/m²). Associations were assessed using the chi-square test. Prevalence ratios (PRs) and 95% confidence intervals (CIs) were estimated using modified Poisson regression with robust standard errors, using normal BMI as the reference category.

Results : Among 1,014 participants, 248 (24.5%) had hypertension. Hypertension prevalence was 12.5% among underweight participants, 20.2% among those with normal BMI, 21.6% among overweight participants, and 31.6% among participants with obesity. BMI category was significantly associated with hypertension (χ^2 = 20.011, df = 3, $p < 0.001$). Compared with normal BMI, obesity was associated with a higher prevalence of hypertension (PR = 1.56; 95% CI: 1.23–1.99; $p < 0.001$).

Conclusion/Lesson Learned : BMI category was significantly associated with hypertension, with the highest prevalence observed among participants with obesity. Integrating BMI assessment with blood pressure measurement may support hypertension screening and cardiovascular risk assessment in primary health care.

Keyword : Body Mass Index; Hypertension; Obesity; CKG program