

# The association between body mass index and health related problems among adolescents in Machang district, Kelantan

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## ABSTRACT

**Introduction:** The global rise in overweight and obesity among adolescents has led to an increased prevalence of various health problems. In line with the National Health and Morbidity Survey: Adolescent Health Survey 2022 conducted in Malaysia, it has been observed that one out of every three adolescents is either overweight or obese. This study aimed to examine the association between body mass index (BMI) and the occurrence of health problems among adolescents in the Machang district. **Materials and Methods:** A cross-sectional study was conducted on a sample of 337 adolescents aged 10 to 19 years in Machang in 2022. BMI was determined using height and weight measurements and categorized into underweight, normal weight, overweight, and obese groups. The prevalence of health-related problems was assessed based on self-reported information on physical health, mental health, sexual health and high-risk behaviours. The association between BMI and the number of health problems was evaluated using chi-square test and logistic regression analysis while adjusting for potential confounding variables. **Results:** The prevalence of overweight and obesity was found to be 16.6% and 12.2%, respectively. The commonly reported adolescent health problems were physical health (51.6%), mental health (12.1%), sexual health (3.3%) and risky behaviour (10.6%). There was a significant association between BMI and the occurrence of health problems ( $p < 0.001$ ) with every unit of BMI increment showing 19% higher odds (95% CI: 1.120, 1.265) of experiencing health problems. The occurrence of health problems was also significant among adolescents attending secondary school as compared to primary school students ( $p = 0.03$ ) with the odds ratio of 2.3 (95% CI: 1.094, 4.957). **Conclusion:** This study establishes a robust association between BMI and the prevalence of health-related problems among adolescents in the Machang district. Overweight and obese adolescents face an increased risk of encountering multiple health problems. Emphasizing preventive measures, such as promoting a nationwide healthy lifestyle to prevent obesity and overweight is crucial to mitigate the burden of health problems among adolescents.