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Trend, projection and appropriate body mass index cut-off point for diabetes and hypertension

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Statement of the Problem: Rapid increasing of high body mass index (BMI) is a global health concern. Population with high BMI predicts an increased risk of diabetes and hypertension. The objective of the present study is to estimate the trend and prediction of diabetes and hypertension in Bangladesh, to examine the association of BMI with risk of diabetes and hypertension and to ascertain an appropriate BMI cut-off point for screening diabetes.

Methodology & Theoretical Orientation: We searched PubMed from inception to August 2016 and identified studies reporting diabetes and hypertension prevalence in Bangladesh. Bangladesh Demographic and Health Survey 2011 data was also included in this study. Bayesian model was used to estimate trend and projection in diabetes and hypertension prevalence by sex and residence.

Findings: Prevalence of diabetes increased between 1992 and 2015 from 3.2% to 12.1% in men and from 2.5% to 13.4% in women. Diabetes prevalence in 2030 is expected to reach 23.6% for men and 33.5% for women. Hypertension prevalence increased between 1992 and 2015 from 11% to 20.4% in 2015 in men and from 14% to 21.3% in women. Adults with BMI of 22.5 kg/m^2 or above had a higher risk of diabetes and hypertension in this study. The optimal BMI cut-off point for screening diabetes was 23 kg/m^2 for overall population, 22 kg/m^2 for men and 23 kg/m^2 for women.

Conclusion & Significance: Diabetes is more prevalent among women and rural population groups, while hypertension is more prevalent among men and urban population groups in Bangladesh. A BMI of 22.5 kg/m^2 or more is risk factors for developing diabetes and hypertension. Screening for diabetes may be considered for all Bangladeshi adults with a BMI of ≥23 kg/m^2.

Biography

Md Mizanur Rahman has received his Bachelor's and Master's degree in Demography from Rajshahi University, Bangladesh. He has received his PhD in Health Financing from the University of Tokyo, Japan. After obtaining PhD, he has worked as a Postdoctoral Fellow at the University of Tokyo and is currently working as a Project Assistant Professor in the same university. Before joining the University of Tokyo, he has worked as an Assistant and Associate Professor in the Department of Population Science, University of Rajshahi, Bangladesh. He has also received several awards including the Best Faculty Award 2015 from the University of Rajahshi based on highest impact factor and Best Young Investigator Award for the 48th APACPH, 2016.

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