



Diabetes Prevalence and Risk Factors Among Vietnamese Adults: Findings From Community-Based Screening Programs

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Worldwide diabetes prevalence is projected to increase from 8.3% (382 million adults) in 2013 to 8.8% (592 million adults) by 2035 (1), with more than 80% of cases in low- and middle-income countries. Consistent with this global trend, estimated prevalence of diabetes in Vietnam has risen from 2.9% in 2010 (2) to 5.4% in 2013 (1). However, these estimates derive from studies of hospital admissions or small samples and underrepresent Vietnam's large rural population. We contribute to the literature by estimating the prevalence of diabetes and exploring its determinants using data from 2011–2013 community diabetes screening programs among adults in rural and urban areas of northern Vietnam.

Eligible residents were nonpregnant individuals aged 30–69 years, with at least one risk factor for diabetes verified by physicians. Anthropometry and blood pressure were measured, and lifestyle factors were ascertained through a structured interview. Fasting and 2-h postload capillary glucose levels were determined and converted to the equivalent concentrations in plasma (3). The present analysis is based on 16,282 subjects aged 30–69 years (5,602 men and 10,680 women), using the 2006 World Health Organization diagnostic criteria for diabetes (4) and the 2009 Vietnam national population census for standardization.

After standardization for age (10-year interval), sex, and urban versus rural

residence, the prevalence of diabetes in all subjects was 6.0% (95% CI 5.2–6.7). The age- and residence-standardized prevalence among men was 6.7% (5.3–8.0) and among women was 5.2% (4.7–5.8). Diabetes prevalence progressively increased with advancing age; the 10-year age-specific prevalence of diabetes (95% CI) in ascending order of age was 1.9 (0.2–3.5), 6.2 (5.2–7.1), 10.0 (9.2–10.9), and 12.4 (11.2–13.5), respectively. The odds of diabetes were significantly higher in overweight/obese individuals (BMI ≥ 23 kg/m², $n = 6,537$) compared with normal-weight participants (18.5 \leq BMI < 23 kg/m², $n = 8,285$), with odds ratio (OR) for diabetes being 1.52 (95% CI 1.35–1.72). Men who did physically heavy work, defined as requiring hard physical effort and causing large increases in breathing or heart rate, had significantly lower odds of diabetes than did those with physically light work (OR 0.59 [0.36–0.98]). Urban men were 1.2 times more likely to have diabetes than were rural men (OR 1.23 [1.01–1.50]).

Our standardized diabetes prevalence of 6.0% was higher than previous studies (3.8% [5] and 5.4% [1]) and is similar to estimates for the Philippines (6.0%), Myanmar (5.7%), and Thailand (6.4%) but much lower than those for Taiwan (9.8%), Australia (10%), and Malaysia (10.1%) (1).

One limitation is that individuals encouraged to participate in community screening were those who had at least one risk factor, such as older age or hypertension. This issue, however, does not lead to much overestimation of prevalence because the presence of at least one risk factor is common.

In conclusion, the current study found that about 1 in 17 Vietnamese adults (1 in 15 men and 1 in 20 women) had diabetes. Urbanization, population aging, elevated adiposity, and physical inactivity appear to be important contributors to the increasing prevalence of diabetes in Vietnam.

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edited the manuscript. N.M.P. is the guarantor of this work and, as such, had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

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