

## Abstracts



# Dietary adequacy in tobacco-user and non-user households in Bangladesh

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## Abstract

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**Background** Researchers have found dietary differences between people who smoke tobacco and those who do not, with lower intakes of fish, fruits, and vegetables in smokers. However, most of these studies are from developed countries, and less is known about the effects of tobacco on diet in developing countries where malnutrition is an important public-health challenge. Furthermore, the effect of smokeless tobacco on diet are not known. In this study, we aim to evaluate the effect of tobacco use on diet in a developing country.

**Methods** We used data from the nationally representative Household Income Expenditure Survey (HIES-2010) from Bangladesh. The HIES 2010 included data from 12 240 households (7840 rural and 4400 urban). The consumption module of the HIES survey recorded household food consumption quantities and money spent on those for 14 days. The data for 14 days' food expenditure was collected in 7 visits with 2 days' recall, and included both ethnic and region-specific foods. Data on tobacco and tobacco products, including cigarettes, tobacco leaf, bidies, gul, and betel leaf were recorded in the consumption section of the questionnaire.

**Findings** Overall, 8693 (71.02 %) households reported positive expenditure on tobacco (smoking, smokeless, or both), and were classified as any-tobacco users. Of these 8693 households, 2061 (16.8%) used smoking tobacco only, 3284 (26.8%) used smokeless tobacco only, and 3348 (27.4%) used both. After controlling for household expenditure, household size, place of residence, and education, any-tobacco users consumed significantly lower amounts of vegetables per household ( $\beta=-18.35$  g/day;  $p<0.0001$ ), milk and dairy ( $-12.83$  g/day;  $p<0.0001$ ), fish ( $-11.19$  g/day;  $p<0.0001$ ), meat ( $-7.60$  g/day;  $p<0.0001$ ), legumes ( $-3.31$ g/day;  $p<0.0001$ ), eggs ( $-1.60$  g/day;  $p<0.0001$ ) compared with tobacco non-user households. However, mean daily intake of cereal products ( $\beta=24.744$  g/day;  $p<0.0001$ ) was significantly higher in any-tobacco users than in non-user households. We observed similar significant associations for users of smokeless tobacco versus non-users.

**Interpretation** The project provides evidence to support policy recommendations for addressing poor dietary intakes and the malnutrition burden in tobacco-user households in developing countries such as Bangladesh. Addressing tobacco use in relation to malnutrition would make tobacco control a higher priority for developing countries and for meeting the post-2015 development agenda of eradicating extreme poverty and hunger.

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### Declaration of interests

We declare no competing interests.

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