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Comparison of Health Behaviour Mortality Hazards in Canada and the United States

Fisher, S^{1,2,3}, Bennett, C^{4,5}, Hennessy, D⁶, Fines, P⁶, Jessri, M^{4,7}, Eddeen, AB², Sanmartin, C⁶, and Manuel, D^{4,5,8,9}

¹Ottawa Hospital Research Institute

²Institute for Clinical Evaluative Sciences

³University of Ottawa

⁴Clinical Epidemiology Program, Ottawa Hospital Research Institute (OHRI)

⁵Institute for Clinical Evaluative Sciences, UOttawa

⁶Statistics Canada

⁷Faculty of Medicine, University of Ottawa

⁸Bruyère Research Institute

⁹University of Ottawa, School of Epidemiology and Public Health

Introduction

National health surveys, available in over 100 countries, are the most common data used for health behaviour surveillance and are increasingly being linked to individual-level health outcomes. We propose that improved health behaviour hazard estimates can be obtained from pooled international population health surveys linked to outcome data.

Objectives and Approach

The objective of this study was to compare smoking, alcohol, diet and physical activity all-cause mortality hazards in Canada and the United States using individual-level, linked population health survey data and common model specifications. The Canadian Community Health Survey (CCHS) (2003-2007) and the United States National Health Interview Survey (NHIS) (2000, 2005) linked to individual-level mortality outcomes with follow up to December 31, 2011 were used. Variable definitions consistent across the CCHS and NHIS were developed and used to estimate country-specific mortality hazards with sex-specific Cox proportional hazard models, including health behaviours, sociodemographic indicators and proximal factors including disease history.

Results

A total of 296,407 respondents and 1,813,884 million person-years of follow-up from the CCHS and 62,226 respondents and 497,909 person-years from the NHIS were included. Hazards of smoking, alcohol consumption, diet and physical activity in Canada and the United States are of similar magnitude and direction, with similar dose response relationships. The largest health behaviour mortality hazards were associated with fe-

male heavy smokers in both Canada (HR: 3.36, 95% CI: 2.86, 3.95) and the United States (Female HR: 2.63, 95% CI: 2.11, 3.27), compared to non-smokers.

Conclusion/Implications

Health behaviour mortality hazards are comparable in Canada and the United States, supporting the use of hazards obtained from pooled analyses for population health. These hazards can replace those obtained from independent epidemiology studies that are often incompletely adjusted, rarely population-based and often not generalizable to the population of interest.