

The Impact of Physical Inactivity on Canadian Health Care

Summary

This article highlights a study that estimates the impact of physical inactivity on the Canadian health care system.

The study estimates how often health care services are being used in association with physical inactivity.

Key Terms

Count data models are a form of statistical analysis that uses non-negative integers. Examples include numbers of physician visits or hospital stays.

The **Canadian Community Health Survey (CCHS)** is administered by Statistics Canada and provides data on the lifestyle and health of Canadians.

Health determinants are factors that influence health such as income and social status, education, the physical environment, and personal health practices.

Social costs are the external financial and non-financial costs that unhealthy habits impose on everyone (e.g., increased public health care costs). In collectively funded health care, people with healthy habits who generally use fewer health care services indirectly subsidize those with unhealthy habits who generally use more health care services.

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In spite of the known benefits of physical activity on health, people are spending more time in sedentary activities and becoming less active.

Hours in front of the TV have increased (Statistics Canada, 2006a). The rapid rise of Internet use has also contributed substantially to inactive lifestyles (Statistics Canada, 2006b). Ultimately, two-thirds of Canadians aged 20 and older are not physically active enough to meet the guidelines of *Canada's Physical Activity Guide* (Public Health Agency of Canada, 2008).

As a result, physical inactivity has become a major health issue in Canada and much of the developed world. Physical inactivity is consistently associated with chronic diseases such as diabetes, cardiovascular disease, and osteoporosis, and chronic diseases are a significant cause of premature death (Katzmarzyk & Janssen, 2004; World Health Organization, 2002). Also, people who are inactive often have a lower quality of life due to health problems.

Physical inactivity has negative consequences not just for inactive people, but also for society at large. Because physical inactivity contributes to health issues that require people to use more health care services, physical inactivity imposes extra costs on the publicly funded health care system. These external or social costs of inactivity are substantial.

What We Did

Using data from the Canadian Community Health Survey (CCHS), we estimated how often health care services are being used in Canada in association with physical inactivity.

The CCHS is administered by Statistics Canada. The survey is representative of the Canadian population and includes population-level information on health determinants, health status, and use of health care services.

The CCHS also includes information on Canadians' total daily energy expenditure from all leisure-time physical activities. Using this data, the survey categorizes people as active or inactive.

We used count data regression models to examine the use of health care services by active and inactive people as categorized by the survey. We used this approach rather than an unadjusted comparison between active and inactive people because physical activity is not the only factor that affects how often people use health care services.

People with different physical activity levels could have different socio-economic and demographic characteristics as well as differences in their physical and mental health. These differences may also affect their demand for health care services. We controlled these factors with count data regression models in order to estimate the use of health care services associated with physical inactivity. *(Continued on page 4)*



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What We Found

On average, active people use significantly fewer health care services compared to inactive people. Physical inactivity imposes substantial social costs in the form of increased hospital stays and increased use of physician and nurse services.

The results show that, compared to an active person, an inactive person:

- spends 38% more days in hospital
- uses 5.5% more family physician visits
- uses 13% more specialist services
- uses 12% more nurse visits

On an annual basis, additional use of health care associated with insufficient physical activity is about:

- 2.37 million family physician visits
- 1.33 million other physician visits
- 0.47 million nurse visits
- 1.42 million hospital stays

These are the estimates of social cost for the publicly funded health care system in Canada.

Practical Implications

Regular physical activity is an effective preventive care for several chronic diseases (Hughes, Seymour, Campbell, Whitelaw, & Bazzarre, 2009; Warburton, Nicol, & Bredin, 2006). Ultimately, increased physical activity improves people's health and has the potential to reduce expensive health care services.

If a health promotion effort was successful in eliminating physical inactivity in Canada, it might create substantial savings through less use of expensive health care procedures and services.

This is currently an under-researched area. It is hoped that studies such as this will provide a solid foundation for further research. Ideally, this research will enhance our understanding of the implications of physically active lifestyles on the use of health care services as well as the factors that affect people's lifestyle decisions.

Full details of this study were recently published in *Health Economics* (Sari, 2009).



About the Author

Nazmi Sari, PhD, is an associate professor in the Department of Economics at the University of Saskatchewan. After receiving his PhD in economics from Boston University, he worked as an assistant professor in the School of Policy and Management at Florida International University. He has taught graduate and undergraduate courses on health economics and quantitative analysis.

Dr. Sari's current work concentrates on the economics of health promotion and prevention, specifically the economics of smoking, physical inactivity, and youth suicides. His research interests include: economics of health promotion and prevention; economics of suicide prevention programs; competition, health care quality, and cost in hospital markets; health care financing and provider reimbursements; and human resource projections in health care markets.



About the Organization

The **Saskatchewan Population Health and Evaluation Research Unit (SPHERU)** is a bi-university research unit with offices located across Saskatchewan in Regina, Prince Albert, and Saskatoon. SPHERU engages in population health research, which is the study of social factors that contribute to the well-being of various groups within the population. Working across various disciplines, SPHERU researchers collaborate with communities, other academics, and policy-makers to undertake this critical research.

Bonnie Zink, SPHERU communications and knowledge exchange officer, assisted with writing this article.

