

Canadian trends in the social determinants of health inequalities, a census-mortality linkage approach

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Introduction

Mortality inequalities by income and education levels have historically been estimated using an area-based approach in Canada. Although useful in measuring socioeconomic inequalities overtime, this method underestimates the level of inequality and only allows the examination of a single dimension at a time.

Objectives and Approach

To create a series of census linked datasets that allowed for the examination of health inequalities across different socioeconomic dimensions. Specifically, five census cycles (beginning with the 1991 Census) were probabilistically and deterministically linked to different health outcomes (mortality, cancer, hospitalization) to create the Canadian Census Health and Environment Cohort (CanCHEC). Each dataset was created using a similar methodological approach which allowed for the measurement of these health inequalities over time. Mortality inequalities by both income and education level (including multidimensional) for all causes and cause-specific groups were examined.

Results

Five census linked datasets were constructed that followed mortality for a period of up to 20 years. The 1991 CanCHEC includes 2.6 million adults, the 1996 and 2001 CanCHECs include 3.5 million adults respectively, and the 2006 and 2011 CanCHECs include 5.9 and 6.5 million people respectively. Findings revealed a stair-stepped gradient in all-cause and cause-specific mortality by educational attainment and income quintile across each time period. The lowest mortality rates were among the university educated and richest income quintile and highest mortality rates among those with less than high school graduation and the poorest income quintile. The gradient differed by cause of death groupings. Over the 25-year time period, the mortality gradient trend varied by socioeconomic dimension and cause of death.

Conclusion/Implications

These data show clear mortality inequalities by socioeconomic position across the different time periods. These linked datasets can help advance knowledge in understanding health inequalities in Canada as well as provide a tool for on-going surveillance of health inequalities by different socioeconomic dimensions.

