Individual and area socioeconomic inequalities in cause-specific unintentional injury mortality: 11-Year follow-up study of 2.7 million Canadians

Stephanie Burrows a,*, Nathalie Auger a, b, c, Philippe Gamache b, Denis Hamel b

a Centre de recherche du Centre hospitalier de l’Université de Montréal, Hôtel-Dieu du CHUM, 3840 rue Saint-Urbain, Montréal, Québec H2W 1T8, Canada
b Institut national de santé publique du Québec, 945, avenue Wolfe, Québec, Québec G1V 5B3, Canada
c Département Médecine Sociale et Préventive, Université de Montréal, 1420, boul. Mont-Royal, Montréal, Québec H2V 4P3, Canada

A R T I C L E   I N F O

Article history:
Received 17 July 2011
Received in revised form 10 November 2011
Accepted 18 November 2011

Keywords:
Socioeconomic status
Unintentional injuries
Mortality
Adults

A B S T R A C T

This study investigated the association between individual and area socioeconomic status (SES) and leading causes of unintentional injury mortality in Canadian adults. Using the 1991–2001 Canadian Census Mortality Follow-up Study cohort (N=2,735,152), Cox proportional hazard regression was used to calculate hazard ratios and 95% confidence intervals for all-cause unintentional injury, motor vehicle collision (MVC), fall, poisoning, suffocation, fire/burn, and drowning deaths. Results indicated that associations with SES differed by cause of injury, and were generally more pronounced for males. Low education was associated with an elevated risk of mortality from all-cause unintentional injury and MVC (males only) and poisoning and drowning (both sexes). Low income was strongly associated with most causes of injury mortality, particularly fire/burn and poisoning. Having no occupation or low occupational status was associated with higher risks of all-cause injury, fall, poisoning and suffocation (both sexes) and MVC deaths among men. Associations with area deprivation were weak, and only areas with high deprivation had elevated risk of all-cause injury, MVC (males only), poisoning and drowning (both sexes). This study reveals the importance of examining SES differentials by cause of death from a multilevel perspective. Future research is needed to clarify the mechanisms underlying these differences to implement equity-oriented approaches for reducing differential exposures, vulnerability or consequences of injury mortality.

© 2011 Elsevier Ltd. All rights reserved.

1. Introduction

Unintentional injury is the sixth leading cause of death for Canadians of all ages, with motor vehicle collisions (MVCs), falls, poisoning, suffocations, drowning and burns accounting for three-quarters of cases, or approximately 7000 deaths per year (Public Health Agency of Canada, 2008). Besides being a major cause of premature death, unintentional injury typically has a steep socioeconomic gradient (Laflamme et al., 2009a). Although a goal of Canadian health policy is to reduce or eliminate socioeconomic inequalities in health, relatively little work has been done to document socioeconomic inequalities in injury mortality. Canadian studies tend to only include children/youth or examine disadvantage from an area-level perspective (Joly et al., 1989, 1991; Dougherty et al., 1990; Bagley, 1992; Faelker et al., 2000; Birken et al., 2006; Gilbride et al., 2006; Oliver and Kohen, 2010). Multi-level studies that disentangle the influence of adult socioeconomic status (SES) from their living areas are absent in Canada and rare elsewhere (Cubbin et al., 2000a; Borrell et al., 2002). Moreover, injuries such as fall, poisoning or drowning contribute substantially to injury burden, but their associations with SES are seldom investigated. Knowledge of the safety divide for different injury causes can deepen our understanding of underlying mechanisms and pathways for prevention, thereby facilitating targeted prevention activities (Boland et al., 2005). The aim of this study was therefore to examine the association between individual and area SES and leading causes of unintentional injury mortality in Canadian adults.

2. Materials and methods

2.1. Data

Data came from the 1991–2001 Canadian Census Mortality Follow-up Study, which linked 1991 census data to mortality data over a follow-up period of 10.6 years for 15% of the Canadian non-institutionalized population aged 25+ years at baseline.