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Injury Incidence Trends Vary by Age, Sex, and Race Among Older Americans, 2004-2017

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Purpose:

The majority of research on injuries to older adults focuses exclusively on falls. The scarcity of research on non-fall injuries is a conspicuous oversight, given that 40% of injuries sustained by older adults are due to reasons other than falls, and even minor injuries significantly increase the risks of long-term disability, institutionalization, and early mortality. Using best available nationally representative data, we produce annual estimates of injury incidence for US older adults for: (1) all-cause fatal and nonfatal injury, (2) fatal and non-fatal falls, (3) fatal and nonfatal injuries due to non-fall causes, and (4) minor and serious nonfatal injuries. We also evaluate age, sex, and race differences in injury trends.

Methods:

We fit Poisson and negative binomial models to 2004-2017 National Vital Statistics System (NVSS) and National Health Interview Surveys (NHIS) data to estimate injury incidence rates. All models included year, age, sex, and race, and interactions between year and age, sex, and race.

Results:

The overall fatal injury incidence rate for older adults remained stable over 2004 to 2017, at roughly 125 injury-related deaths per 100,000. However, this apparent stability conceals two countervailing trends: a 43% increase in fatal falls and a 20% decrease in fatal non-fall injuries.

The nonfatal injury incidence rates for older adults increased continuously between 2004 and 2017. We observed this sustained increase across all types of nonfatal injuries. We also found a 68% increase in nonfatal injury incidence, with nonfatal falls increasing by 46%, nonfatal non-fall injuries by 102%, serious nonfatal injuries by 49%, and minor nonfatal injuries by 96%. The largest incidence rate increases were in non-fall and minor injuries.

Our findings suggest that adults aged 85+ were the most vulnerable to fatal and nonfatal injuries. Compared to older men, older women were more likely to sustain a nonfatal injury, but less likely to die due to injury. Compared to white older adults, black and other race older adults were not only less likely to have a nonfatal injury but also less likely to die due to injury. This may result from positive health selection into older ages for black and other race Americans. The adverse circumstances faced by non-white Americans at young ages lead to the frailest individuals dying before they reach old age, so that only the healthiest non-white individuals are alive to be at risk of sustaining an injury as an older adult.

Conclusion:

There is an extensive literature about intervention programs effective in reducing the rate of injuries, particularly falls, among older adults. Unfortunately, the benefits of these intervention programs do not appear to have translated into a population-wide decrease in fatal and nonfatal fall incidence rates over the past decade. The marked increase in fatal and nonfatal falls should alert policymakers, health care providers, and researchers to the immediate need to widely disseminate and adopt successful fall prevention interventions. Moreover, the doubling of nonfatal non-fall and minor injury incidence over the past decade suggests additional prevention outreach efforts in general injury and outpatient settings are necessary.

Title:

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Keywords:

fall, injury and older adults

Abstract Summary:

Using best available nationally representative data, we produce annual estimates of injury incidence for older adults for 2004 to 2017: (1) all-cause fatal and nonfatal injury, (2) fatal and non-fatal falls, (3) fatal and nonfatal injuries due to non-fall causes, and (4) minor and serious nonfatal injuries.

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Author Summary: Dr. Xu's research focuses on aging and long-term care, health outcomes and policy, prevention and management of chronic conditions, quality of care, and quality of life. Her career goal is to translate research into practice and policy to manage complex care needs of older adults, promote their health, and achieve optimal quality of life. she has published 36 peer-reviewed papers which have been cited more than 400 times.

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