

Kids in neighbourhoods with larger households less likely to be killed in house fires

September 4 2019



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There is safety in numbers. That's one of the key findings of a study published today in *CMAJ Open* that found a child's risk of death or

injury in a residential fire was greatly reduced in neighbourhoods with larger than average households.

Led by researchers with the BC Injury Research and Prevention Unit (BCIRPU) at BC Children's Hospital and the University of British Columbia (UBC), the study is the first to broadly investigate the [socioeconomic factors](#) that affect fire incidence and fire-related injuries and death at the neighbourhood level in Canada.

"Many studies have looked at how individual factors, like smoking or drinking, increase a person's risk of being injured in a fire, or those studies overlooked children altogether," said senior author Dr. Ian Pike, director of the BCIRPU and professor with the UBC department of pediatrics. "By shedding light on the neighbourhood-level factors, this research could help municipalities and emergency responders identify areas at greater risk and adapt campaigns to target those most vulnerable."

Researchers examined data from BC, Alberta, Manitoba and Ontario on fire incidence and injury along with neighbourhood-level data on income, education level, unemployment rate and number of people per home. They found that the single factor with the greatest impact on safety was household size; in neighbourhoods with larger households, each additional person reduced a child's risk of getting injured by 60 per cent and an adult's risk by 25 per cent. In this study, average household size ranged from 1.8 to 4.4 people per home.

"We don't know why bigger households are safer, but it does make sense," said lead author Dr. Emilie Beaulieu, a pediatrician and UBC postdoctoral fellow at BC Children's. "Older siblings may be getting the [younger siblings](#) out and, in lone-parent families, parents may face more barriers in getting their kids out, like having to travel back into the home to rescue a young child."

Despite progress in fire safety, residential fires are still responsible for many deaths and injuries in Canada every year; from 2005 to 2015, 145,252 residential fires and 9,952 casualties were reported. These [traumatic events](#) can result in long-term physical and emotional suffering.

"This research shows we should be rethinking our strategies around [fire safety](#)," said Beaulieu. "People living in neighbourhood with small families and households are at greater risk of being injured or killed when fires occur. We should ensure families in these areas have escape plans in place and that children and youth know how to get out and get safe."

Researchers used data from 2005-2015 from the National Fire Information Database along with 2011 census subdivision social domain data from Statistics Canada. The National Fire Information Database is a demonstration project carried out by the Canadian Association of Fire Chiefs and a division of Statistics Canada in collaboration with the Fire Marshalls and Fire Commissioners through a grant from the federal government.

More information: Emilie Beaulieu et al, Association between neighbourhood socioeconomic features and residential fire incidence, related casualties and children: a cross-sectional population-based study in 4 Canadian provinces, *CMAJ Open* (2019). [DOI: 10.9778/cmajo.20190079](#)

Provided by University of British Columbia

Citation: Kids in neighbourhoods with larger households less likely to be killed in house fires (2019, September 4) retrieved 3 July 2023 from <https://medicalxpress.com/news/2019-09-kids->

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