

Similarities in Firearm Fatality in Urban and Rural Counties in Missouri

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Received Aug. 28, 2025; Accepted for publication Sept. 10, 2025; Published online Sept. 11, 2025

<https://doi.org/10.17161/kjm.vol18.24432>

Introduction. Firearm injuries are a public health issue. Between 2018 and 2022, Missouri's firearm-related fatality rate was 22.5 deaths per 100,000 people, compared to a national average of 13.2. Gun violence is not exclusively an urban issue; firearm injuries occur across all communities. This study explored firearm-related mortality rates for urban and rural counties in Missouri.

Methods. Five-year firearm-related mortality rates (2018-2022) were calculated by county using data from CDC WISQARS (Accessed January 28, 2025). Missouri counties were classified as rural or urban using the definition outlined in Health in Rural Missouri Biennial Report, 2022-2023 (Missouri Department of Health and Senior Services). Ninety-nine counties were rural and 16 were urban (including St. Louis City). Thirty rural counties were excluded due to either low firearm fatality counts or missing data. The aggregate mean mortality rate was calculated for urban and rural counties. Data were analyzed with a Wilcoxon rank sum test to evaluate differences between the two groups.

Results. Five-year firearm-related mortality rates ranged from 10.6 to 55.4 per 100,000 people in urban counties and 10.2 to 45.2 in rural counties. Overall, mean firearm mortality rates per 100,000 people were 20.7 (SD = 11.1) and 20.5 (SD = 7.2) for urban and rural counties, respectively ($p > 0.05$).

Conclusions. The similarities between rural and urban firearm-related mortality rates in Missouri highlight the ubiquitous nature of firearm injuries. Policies preventing firearm mortality may benefit all Missouri residents, regardless of county rurality.