

The Intersection of Methamphetamine Overdoses and Violent Crime in the United States and Oklahoma



Ashton Gatewood, M.P.H.,¹ Lauren Runde, M.S.,² Micah Hartwell, Ph.D.,³ Natasha Bray, D.O.,¹ Ron Thrasher, Ph.D.,² & Jason Beaman, D.O.³

1. Oklahoma State University College of Osteopathic Medicine at Cherokee Nation 2. Oklahoma State University Center for Health Sciences, Department of Forensics Psychology 3. Oklahoma State University Center for Health Sciences, Department of Psychiatry & Behavioral Sciences

INTRODUCTION

Systemic violence is associated with drug markets, and is an outcome of traditionally aggressive patterns of interactions within the system of drug distribution and use. Increasing methamphetamine availability and use is a societal problem due to the association with violence. One longitudinal birth cohort study found that persons using methamphetamine had a 1.6 increased odds of violence perpetration, including intimate partner violence. Current data associating methamphetamine use and violent crimes, independently, with rural communities requires a more in depth analysis.

OBJECTIVE

Our primary objective was to quantify and classify the relationship between methamphetamine use and violent crime and map the intersection across the United States at the county level.

METHODS

Using the data extracted from Federal Bureau of Investigation's National Incident Based Reporting System (NIBRS), CDC's Wide-ranging Online Data for Epidemiological Research (WONDER), and the Oklahoma State's Court Network (OSCN) we estimated the ratio among crude rates of methamphetamine related-deaths and violent crimes per 1,000 people at the county level. Drug-related violent crimes include rape and sexual assault, robbery, physical assault, and murder that occur with drug use. Heat Maps were created in R 3.6.1 to display the data and identify areas of concern. Regression analysis and correlation coefficients were used to determine the relationship between methamphetamine overdoses and violent crimes adjusted for upstream factors of unemployment and urbanicity.

RESULTS

Intersection of Violent Crime and Methamphetamine Overdose 2016

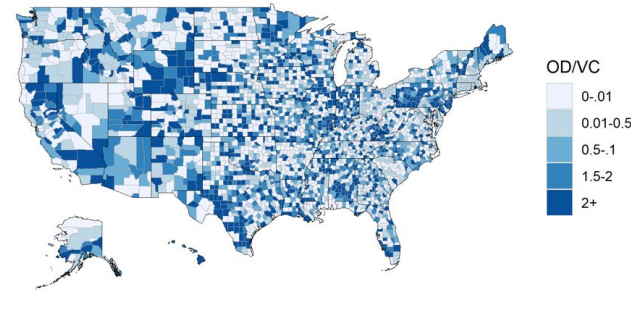


Figure 1. Using NIBRS (national) crime statistics and overdose deaths from WONDER in 2019, we found a statistically significant positive relationship between methamphetamine overdoses and violent crimes (Coeff = 4.64, SE: 0.58, $P < 0.001$) when controlling for unemployment (-41.68, 5.83, < 0.001) and urbanicity (-105.00, 19.42, < 0.001), which had an inverse relationship.

Intersection of Violent Crime and Methamphetamine Crime 2019

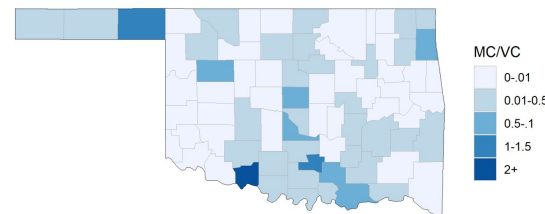


Figure 2. Using OSCN data for the state of Oklahoma, total violent crime was not significantly associated with methamphetamine overdose deaths, however, association was found with criminal filings of methamphetamine possession (0.64, 0.07, < 0.001), unemployment (60.39, 9.51, < 0.001) and urbanicity (70.51, 21.84, 0.001).

CONCLUSION

In this study, our data analysis builds upon the existing literature by revealing a positive relationship between methamphetamine use and violent crime. Furthermore, demographic data including employment status and urbanicity provides a more in-depth understanding of the sociogeographical variation in methamphetamine use and violent crime. Identifying the communities most affected by the adverse associations of methamphetamine has potential for wide-ranging effects, from improving awareness within the medical community and guiding public health initiatives to prioritizing funding. In a largely rural, low-income, and healthcare provider limited state, such as Oklahoma, gaining the combined understanding of critical issues with their geographical impact could empower positive change in the most critically impacted communities.

ACKNOWLEDGEMENTS

This project was supported by Award No. 2020-R2-CX-0014 awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice.

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