# AGE DIFFERENCES AND GEOGRAPHICAL VARIATIONS IN ILLICIT DRUG-RELATED MORTALITY IN IRAN: A BAYESIAN SPATIAL ANALYSIS

Rostami M[1], Jalilian A[2], Ghadirzadeh MR[3], Nazparvar B[3], Rezaei-Zangeneh R[1], Karamouzian M[4,5,6]

[1] Deputy of Health, Kermanshah University of Medical Sciences, Kermanshah, Iran, [2] Department of Statistics, Faculty of Sciences, Razi University, Kermanshah, Iran, [3] Legal Medicine Research Center, Legal Medicine Organization, Tehran, Iran, [4] Centre On Drug Policy Evaluation, Saint Michael's Hospital, Toronto, ON, Canada, [5] Dalla Lana School of Public Health, University of Toronto, Toronto, ON, Canada, [6] HIV/STI Surveillance Research Center, and WHO Collaborating Center for HIV Surveillance, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran

**Background:**
Due to limited surveillance and data analysis capacities, drug use-related mortality data in the Eastern Mediterranean Region (EMR) are scarce. In Iran, where data on drug use disorders are more available than the rest of the EMR, mental health and drug use disorders are one of the leading contributors to the burden of diseases and have been associated with numerous adverse mental and physical health outcomes. This study aimed to quantify the spatial and age distribution of direct illicit drug-related mortalities in Iran and inform harm reduction policies and interventions.

**Methods:**
We modeled and mapped registered illicit drug-related deaths from March 2016 to March 2017 in Iran. Data were obtained from the Iranian Forensic Medicine Organization. Using Bayesian spatial analysis, Besag, York, and Mollie's models were fitted to estimate the relative risk (RR) of illicit drug-related mortality across different provinces and age groups.

**Results:**
Out of the total 2,203 registered illicit drug-related mortalities during the study period, most (n = 1289; 58.5%) occurred in the 20-39-year-old age group and among males (n = 2013; 91.4%). The RR of illicit drug-related mortality in the provinces of Hamadan (RR: 3.37; 95% credible interval (CrI): 2.88-3.91), Kermanshah (RR: 1.90; 95% CrI: 1.55-2.28), Tehran (RR: 1.80; 95% CrI: 1.67-1.94), Lorestan (RR: 1.71; 95% CrI: 1.37-2.09), Isfahan (RR: 1.40; 95% CrI: 1.21-1.60), and Khorasan Razavi (RR: 1.18; 95% CrI: 1.04-1.33) were significantly higher than the rest of the country.

**Conclusion:**
We found evidence of age differences and spatial variations in illicit drug-related mortalities across different provinces of Iran. Most illicit-drug-related deaths occurred in the 20–39-years age group and the western provinces. Our findings highlight the urgent need for revisiting Iran's existing drug use treatment and harm reduction policies to ensure overdose prevention programs are adequately available for different age groups and settings.

**Disclosure of Interest Statement:**
None.