1-2020

Understanding the Relationship Between Drug Overdose Death Rates and Socioeconomic Factors

William Duan
Thomas Jefferson University, william.duan@jefferson.edu

Dennis J. Hand
Thomas Jefferson University, dennis.hand@jefferson.edu

Understanding the Relationship Between Drug Overdose Death Rates and Socioeconomic Factors

William Duan, Dennis Hand*

Drug-overdose deaths increased rapidly recently. What are the causes? We believe socioeconomical factors play critical roles. Secondary data analyses are done on the US population, using mortality-data files from the National Vital Statistics System. Deaths are grouped by race, age, sex, education and marital status. We believe that the percentage-of-total-death (PoTD) value, which equals to the number-of-overdose-deaths divided by the total-number-of-deaths in the corresponding group, more accurately reflect the severity of overdose-deaths. Analysis of 2017 data reveals that among all age groups, PoTD is highest in the age 25-34 group, with dramatic differences between white (PoTD 24%) and black (PoTD 9%) populations, and between single (22%) and married (13%) populations. PoTD is generally higher for males than females; however, for the 15-24 age group, the PoTD for females (13%) is higher than males (10%), suggesting the need of special attention to young females in overdose prevention. PoTD is higher (~3%) for population with less-than-college education than college-or-higher education (~1%). However, the population with middle-school or less education has very low PoTD (0.6%). The PoTD vs. education relationship is similar between white and black populations. We also investigate dependencies of PoTD on factors such as day-of-week, and variations in PoTD over the past 15 years. In conclusion, large differences were revealed in the severity of overdose deaths among different socioeconomical groups by examining the PoTD values. We believe that PoTD values of individual groups should be given more considerations when developing health policies in response to the drug overdose crisis.