Mapping Attitudes towards Health Equity and Justice Using the Max-P Algorithm

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ABSTRACT TEXT: In support of the Robert Wood Johnson Foundation Culture of Health Initiative, the American Health Values Survey (AHVS) was a national study of more than 10,000 U.S. adults designed to create a typology based on health values and beliefs. A K-means analysis yielded six unique typology groups, some of which who believe in health equity, race-ethnic disparities, and social determinants of health, and others who do not. Maps were recently created using the AHVS data to explore the typology groups geographically as well as to understand the conceptual constructs that underlie their specific beliefs. Some of these include the belief in the health effects of education, housing quality, access to healthy food, and the community person lives in. The resulting maps and spatial analysis present important geographic differences across the U.S. that have implications across several influential sectors including policy, advocacy and communications. Current efforts are underway to create a communication guide for use among recipients of grants to conduct policy initiatives aimed at creating healthy communities and health care systems. The maps developed as part of the project will be also be made available to support local and regional initiatives. Mapping the AHVS data created unique challenges that were met using open source software.

Our presentation will share a series of maps focused on addressing health equity, social determinants of health and disparities, yet will also present how we avoided the pitfalls of mapping survey data using modeling and visualization with R and GeoDa software packages. Specifically, our presentation will explain how we created information-rich maps while ensuring that (1) areal units have similar numbers of respondents with given beliefs and (2) the maps are easily interpretable. Using the Max-P districting building algorithm in GeoDa, we grouped census tracts by respondent similarity until they met the lower bound for number of respondents per district. This presentation will aim to explain the Max-P algorithm, how to implement it, and why it was chosen over similar regionalization tools.

More information about the AHVS can be found here:

Death By Drugs: A Spatio-temporal Analysis of Drug Epidemic in the U.S.

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ABSTRACT TEXT: The United States is experiencing an epidemic of drug overdose deaths. Drug overdose deaths in 2017 totaled 72,000, which was a 12.5% increase from 2016. The epidemic of drug overdose deaths is a growing public health crisis in the United States. Since 2000, the rate of drug overdose deaths has increased by 137% nationwide, more than 600% since 1980. This exponential growth in overdose numbers makes the drug epidemic more deadly than gun violence, car crashes, or AIDS. In this research, I analyzed the cause of death as a result of drug overdose from 2010 to 2017 on a county level scale. I created a series of maps showing the drug overdose deaths in the country, which allow to decipher the complex and evolving dynamics of the drug overdose deaths in different demographic segments in the U.S. The results show distinct hotspots of drug overdose deaths in states like Ohio, Massachusetts, Indiana, Oklahoma as well as in New Mexico, Nevada, and California. The drug overdose deaths are a leading contributor to premature deaths and are largely preventable. The results may aid the development of more effective drug abuse prevention and control strategies.