

National study of the disease burden of urolithiasis and potential risk factors in the U.S.: an analysis for the Global Burden of Disease Study 2021

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Introduction

Urolithiasis showed increasing prevalence in the United States over the past few decades. This study zooms in on urolithiasis on both a national- and state-level. Using data from the Global Burden of Disease (GBD) study 2021¹, this research evaluates the disease burden of urolithiasis in the U.S. State-level disparities were explored.

Methods

- Incidence and DALYs data from GBD 2021¹
- Characterized the disease burden between sexes and in different age groups
- Elucidated and mapped the disparities observed in disease burden across states and regions

Results

Fig 1A. Incidence stratified by age and sex in 2021

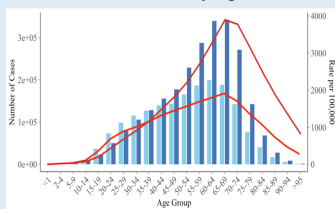
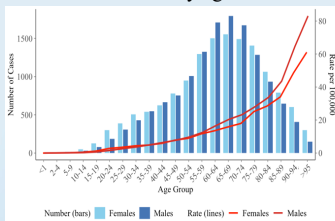
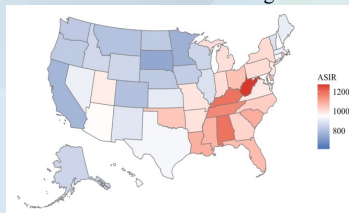


Fig 1B. DALYs stratified by age and sex in 2021

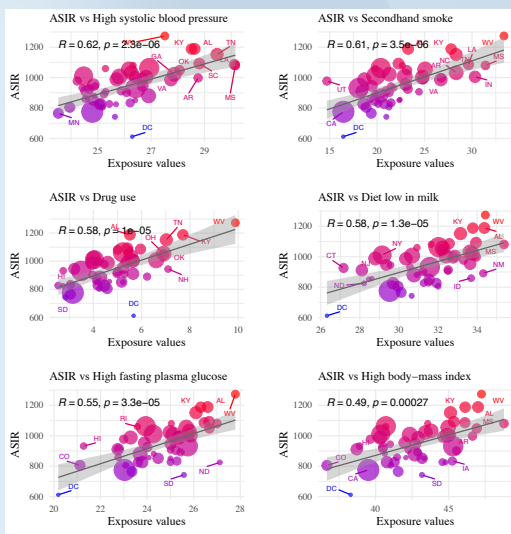


In 2021, the ASIR and ASR for DALYs are 954.04 and 5.69 per 100,000 people. 58% of the incident cases and 49% of the DALYs are males and the peak age for both sexes is 65-69 years old. As age increases, the incidence rate increases to peak age and then decreases. Whereas the DALYs rate increases monotonically with age.

Fig 3A. ASIR across U.S. states and regions in 2021



The incidence and DALYs rate both show a higher value in the south east region of the U.S. West Virginia, Kentucky and Tennessee are among the states with the top ASIR and ASR for DALYs.



Top potential risks factors include high systolic blood pressure, secondhand smoke, drug use, diet low in milk, high fasting plasma glucose, high body-mass index

Conclusion

In this research, we characterized the disease burden of urolithiasis in the U.S. on both a national- and state-level. Our analysis also revealed significant geographic disparities and identified potential risk factors. These findings underscore the need for targeted public health strategies to address the unequal burden of urolithiasis.

References

1. Institute for Health Metrics and Evaluation (IHME). (2021). *Global Burden of Disease Study 2021 (GBD 2021)*. University of Washington.

Fig 3B. ASR-DALYs across U.S. states and regions in 2021

