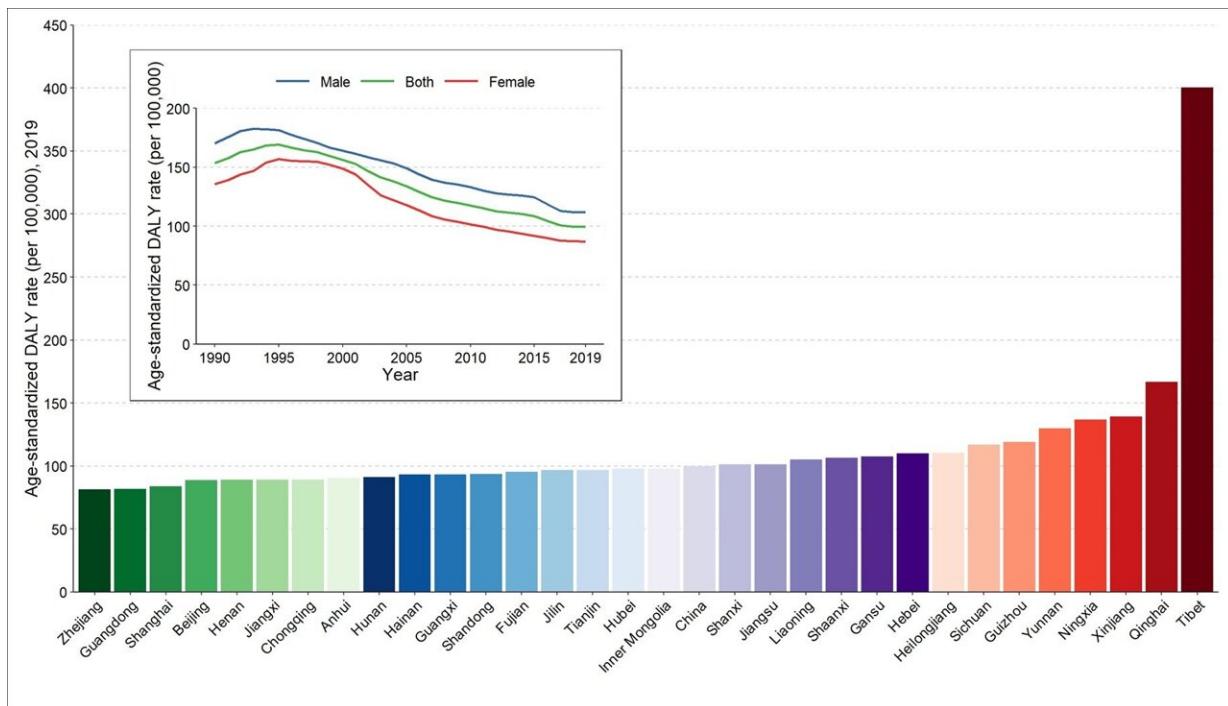


Study highlights epilepsy trends in China between 1990 and 2019

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Age-standardized DALY rates per 100,000 people for epilepsy in China and its provinces show a general decrease with increasing SDI between 1990 and 2019 for both, men and women. Disability-adjusted life years; SDI: Socio-Demographic Index. Credit: Dr. Guoguang Zhao from Capital Medical University, China

Epilepsy—a common neurological disorder characterized by the abnormal firing of neurons in the brain—affects nearly 70 million

people worldwide. The disorder manifests itself in the form of recurrent seizures as well as neurobiological, cognitive, and psychosocial consequences. Although researchers have conducted studies on the burden of epilepsy in China, they have mostly focused on the prevalence rate.

Now, a research team from China has performed a comprehensive analysis of the temporal and spatial distribution of the burden of [epilepsy](#) across China, with respect to gender and [age groups](#). Their findings were published in the *Chinese Medical Journal*.

The team identified prominent trends from the epilepsy data of China and its provinces, municipalities, and autonomous regions between 1990 and 2019. The Global Burden of Disease (GBD) database from 2019 was used as the primary reference.

Says senior author Guoguang Zhao from Xuanwu Hospital, Capital Medical University, China, "The purpose of this study is to comprehensively analyze the time trend of the disease burden of epilepsy by sex and age groups in China and its provinces, municipalities, and autonomous regions from 1990 to 2019 so as to provide epidemiological evidence for development of national and local policies to prevent and treat epilepsy."

Despite the recent advances in medicine, epilepsy, at times, becomes a debilitating condition with serious socioeconomic consequences. It not only affects the physical and mental health of patients, but also adversely impacts families, communities, and society in general. According to estimates, developing nations bear approximately 90% of the global burden of epilepsy. Moreover, owing to its large population base, China has more than 12% of the epilepsy patients in the world. This study, therefore, is of paramount significance.

DALYs—disability-adjusted life-years—associated with epilepsy correspond to the years of life lost due to disability and/or premature death because of this neurological disorder. The study shows that epilepsy resulted in 1,367.51 thousand DALYs across China in 2019. Moreover, for epilepsy, the age-standardized DALY rate—a weighted average of the age-specific DALY rate per 100,000 people—was 99.77 in China. Similarly, the age-standardized incidence and prevalence rates for epilepsy in China were 24.65/100,000 and 219.69/100,000, respectively.

Quite concerningly, the age-standardized incidence and prevalence rates increased by 45.00 and 35.72% relative to those recorded in 1990, respectively. However, on the positive side, the DALYs caused by epilepsy in patients below the age of 25 showed a steady decline between 1990 and 2019.

The highest age-standardized mortality rates were seen in Tibet (4.26/100,000), Qinghai (1.80/100,000), and Yunnan (1.30/100,000), whereas the lowest mortality rates were recorded in the Guangdong (0.48/100,000), Zhejiang (0.56/100,000), and Shanghai (0.57/100,000).

The study also highlights a positive development: The age-standardized DALY rates across China and across its various provinces, municipalities, and autonomous regions showed a general decrease with the increasing socio-demographic index (SDI)—a quantitative measure of social development—between 1990 and 2019.

Certain age-specific differences were also noted during the study. For instance, the DALY rate of epilepsy in 2019, relative to the one observed in 1990, decreased for people below 75 years of age, but increased for those aged 75 years and above. This trend was consistently observed for people across both the genders.

The most significant preventable causes for epilepsy include pre- or perinatal brain injury, central nervous system infections, traumatic brain injury, and stroke. These causes constitute a bulk (25%) of the epilepsy cases according to prior studies.

Lead author Mr. Wei Liu from National Center for Chronic and Noncommunicable Disease Control and Prevention, Chinese Center for Disease Control and Prevention concludes, "The disease burden of epilepsy is still heavy in China, especially in the western provinces. The incidence and prevalence of epilepsy increased between 1990 and 2019, and the burden of epilepsy in the elderly increased gradually. This study provides evidence on epilepsy prevention and care of different regions in China."

More information: Wei Liu et al, Burden of epilepsy in China and its provinces, 1990 to 2019: findings from the Global Burden of Disease Study 2019, *Chinese Medical Journal* (2023). [DOI: 10.1097/CM9.000000000002526](#)

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