

U.S. suffers from lifespan inequality, says researcher

July 29 2014, by Clifton B. Parker



Health care is one of the factors that influences the odds that people will die at a particular age.

The United States has done worse than other wealthy countries at improving health for working-age adults while it has performed about the same in reducing mortality at ages over 65, according to new Stanford research.

"These contrasting trends have made the U.S. a strikingly unequal society in the ages at which people die," said Shripad Tuljapurkar, a biology professor at Stanford's Morrison Institute for Population and Resource Studies and lead author. "International comparisons suggest that this trend is set to continue unless the gap in progress against deaths at working vs. retired ages can be closed."

The research paper, published in the journal *Demography*, shows that in the past six decades, lifespan inequality has varied greatly within and among countries even while [life expectancy](#) has continued to increase.

A nation's health yardstick

Life expectancy is defined as the average age at death, according to Tuljapurkar, the Dean and Virginia Morrison Professor of Population Studies.

"The measure of a nation's health is life expectancy," he said.

Lifespan inequality measures uncertainty in the age at death, Tuljapurkar said. For example, when life expectancy is 80 years, then an uncertainty of 15 years in age at death means a person will likely die between the ages of 65 (80 years minus 15) and 95 (80 years plus 15). Lifespan inequality is the age gap between the ages of those dying early and the longest-lived.

Using data on 37 countries from the Human Mortality Database, the researchers examined mortality and longevity trends between 1947 and 2007. They found that in the United States, inequality in age at death has not fallen since 1950, although life expectancy has risen. In fact, the United States has done as well as Canada (and almost as well as Japan) in reducing mortality for people over 65.

Lifespan inequality in Canada mirrored that in the United States until 1985 – when Canada's inequality fell sharply, due to a national health care program that kept the young healthier.

In 2007, the life expectancy for American males and females was 76 and 81, respectively, while in Canada, it was 78 and 84. Uncertainty was 16 for males and 14 for females in the United States. In Canada, it was 14 for males and 12 for females.

"Younger people in Canada clearly benefited from the National Health program that Canada implemented around 1984. The U.S. only has equivalent health care for people over 65, through Medicare," Tuljapurkar said.

Since 1947, life expectancy has risen in both countries, up about a dozen years or so for both males and females in Canada and the United States.

"So, in 60 years, U.S. male life expectancy went up about 19 percent but uncertainty didn't change at all. Canadian male life expectancy went up about 20 percent but uncertainty went down by about 13 percent," said Tuljapurkar.

Mortality rate and U.S. males

The research shows a higher death rate among young males in the United States, Tuljapurkar pointed out. Mortality is associated with education, income, social support, lifestyle, disease and living conditions. And so, the problem with young American males is rooted in a lack of universal access to health care, he said.

He believes the research is important – every society seeks to increase longevity, he said.

"Inequality in age at death matters to individuals – think about the risk of dying too young to achieve one's dreams, or of outliving one's money – and to society as in the cost of pensions or health care," he said.

Tuljapurkar and his colleagues note that societal progress at saving young lives reduces lifespan inequality. On the other hand, when society "extends" the lives of [older people](#), this increases inequality.

For example, he noted, heart attacks are a major cause of death of young people, whereas influenza or certain cancers are a major cause of death for older people. So, strategies like cholesterol medication, weight control and exercise are effective ways of reducing the mortality of young people.

"But things like a better knowledge of prostate cancer, flu vaccines for those over 65 and chemotherapy are effective ways of reducing the mortality of older people," Tuljapurkar said.

Those strategies are examples of factors that determine the odds that people will die at a particular age, he said.

The researchers also found that Japan has the world's highest life expectancy – 87 years for women and 80 for men. In Japan, progress in thwarting young mortality has stalled, but people over 65 are living longer, he said.

More information: The complete research paper is available online: arxiv.org/ftp/arxiv/papers/1305/1305.0113.pdf

Provided by Stanford University

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