

Study finds years living with disease, injury increasing globally

December 13 2012

No matter where they live, how much education they have, or what their incomes are, people have very similar perceptions on the impact of diseases and injuries.

This finding – counter to the prevailing belief that people throughout the world view different health conditions in very different ways depending on their culture or individual circumstances – is part of a collaborative project, the Global Burden of Disease Study 2010 (GBD 2010). GBD 2010, launched by Harvard School of Public Health (HSPH), the Institute for Health Metrics and Evaluation (IHME) at the University of Washington, and 300 other institutions worldwide, is the single largest and most detailed scientific effort ever conducted to quantify levels and trends in health worldwide.

Two of the seven studies being published in a triple issue of *The [Lancet](#)* on Dec. 14, 2012—the first time the journal has focused an entire issue on one study—were co-led by Joshua Salomon, professor of [global health](#) at HSPH. The first is a major innovation in measuring how health conditions are perceived by the public at large and accounting for these views in evaluating the public health impact of disease and injury. These assessments of the severity of different health outcomes are known as disability weights. The second piece of work co-led by Salomon was the country-by-country analysis of health-adjusted [life expectancy](#) (HALE), also known as healthy life expectancy, which gives an overall summary measure of health in a population, accounting both for how many years people survive, and how healthy they are during these years.

"When the first GBD study was done in the 1990s, there were criticisms about how the impact of different conditions was measured," Salomon said. "With GBD 2010, we decided to stop relying solely on experts to understand what matters most to people and instead went straight to the people themselves."

Creating more critical and credible health severity weights

The authors gathered the opinions of 13,902 participants in household surveys and 16,328 participants in an innovative online survey. Surveys were conducted through personal interviews in Bangladesh, Indonesia, Peru, and Tanzania; telephone interviews in the United States; and an open-access Web-based survey. The sites for the household surveys were selected to provide diversity in language, culture, and socioeconomic status, and the Web-based survey included respondents from most countries of the world.

The survey asks individuals to imagine different health outcomes and compare them to each other in simple, comprehensible questions for all educational levels. A sample question would be "Imagine two people—the first person is completely blind, and the second person suffers from constant intense back pain. Who is healthier overall?"

Answers were then used to calculate a health state severity weight for each of the health consequences, or sequelae, that result from one or more of the conditions being assessed for GBD 2010. Health state severity is the relative severity that members of the public ascribe to different types of disability.

"Whether you are highly educated, male or female, or living in a wealthy or resource-limited setting, this study has shown that people evaluate

different types of [health outcomes](#) in very similar ways," said Christopher Murray, director of IHME, the coordinating center for GBD 2010. "These survey results more critically and credibly define disability weights and suggest that policymakers need to understand the size of health losses resulting from different diseases or injuries first, before setting global, national, and local priorities."

The newly released GBD 2010 study uses these new disability weights and provides an even-handed approach to 291 causes of disease and injury, including 1,160 sequelae of these causes, and 67 risk factors. Using the new information on disability [weights](#), combined with information on how many people at different ages are living with each of the sequelae and on age-specific mortality, the GBD researchers have calculated a comprehensive measure of overall population health called healthy life expectancy.

Majority of the world living longer, but spending more years in poor health compared to 20 years ago

Comparing healthy life expectancy for 187 countries, in 1990 and 2010, the researchers were able to evaluate major patterns and trends in global health over two decades. They found that life expectancy has increased in 19 of 21 regions around the world, but, although people are living longer, they are spending these later years living with poor health. Healthy life expectancy has increased more slowly than life expectancy over the last 20 years, and substantial differences in healthy life expectancy persist across countries. Gains in healthy life expectancy over the last two decades have been made primarily through reductions in child and adult mortality rather than reductions in years lived with a disability.

"In the past two decades, there has been less attention towards reducing

the impact of non-fatal disease and injury than towards reducing mortality," said Dr. Haidong Wang, professor of global health at IHME and one of the co-authors on the healthy life expectancy paper. "As the global population is living longer, efforts to improve health need to also incorporate the burden of disease that affects how we function."

Over the last six decades, advances in medicine and public health, improved living standards, rising levels of educational attainment, and declines in fertility have contributed to dramatic reductions in mortality in most regions of the world. With the accompanying trend of people surviving to more advanced ages, there is increased recognition of the need to prioritize healthy aging.

In 2010, global HALE at birth was 58.3 years for males and 61.8 for females, compared to 54.4 and 57.8, respectively, in 1990. Overall life expectancy exceeded HALE in 2010 with a difference of 9.2 years for males and 11.5 years for females. While life expectancy at birth for males and females increased by 4.7 years for males and 5.1 years for females, HALE at birth increased only 3.9 years and 4.0 years, respectively. This indicates that, on average, the world loses more years of healthy life to disability today than 20 years ago.

The gap between the sexes in both life expectancy and HALE continues to widen, too. Gains have been higher for women in both life expectancy and HALE. Just three countries have higher healthy life expectancy rankings for males than for females. Canada, the UK, and the USA ranked 7th, 20th, and 32nd, respectively, for male healthy life expectancy at birth, and 23rd, 29th, and 35th for female healthy life expectancy.

While HALE has increased in most regions, there are two dramatic exceptions: Southern Africa, where adult mortality from HIV/AIDS has erased years of life expectancy, and the Caribbean, where the 2010

earthquake in Haiti killed an enormous number of people. Across countries, healthy life expectancy at birth in 2010 for males ranged from 27.9 in Haiti to 68.8 in Japan, and healthy life expectancy at birth for females ranged from 37.1 in Haiti to 71.7 in Japan.

Findings encourage re-examination of global public health targets and priorities

Countries are facing a coming wave of financial and societal costs from the rising number of people living with diseases and injuries. The results from GBD 2010 highlight the limited progress that has been made in reducing the prevalence of disability, and point to the need for greater attention to non-fatal consequences that limit people's physical and mental function, including mental [health conditions](#) and musculoskeletal disorders.

The authors emphasize that despite the lack of progress in reducing disability, there are also encouraging signs that healthy aging is possible. If all countries could achieve the low years-lived-with-disability per capita rates seen in Japan, for example, substantial increases in healthy life expectancy would be realized. These improvements would likely be accompanied by reductions in the costs of managing diseases and injuries.

"As mortality decreases in populations around the world, studying healthy life expectancy becomes even more important," said Alan Lopez, one of the founders of the Global Burden of Disease and head of the School of Population Health at the University of Queensland. "By tracking trends in [healthy life](#) expectancy, we gain a greater understanding of the changes in morbidity and disability that are having a significant impact in reducing the years people are living in good health."

Provided by Harvard School of Public Health

Citation: Study finds years living with disease, injury increasing globally (2012, December 13)
retrieved 3 May 2024 from

<https://medicalxpress.com/news/2012-12-years-disease-injury-globally.html>

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