

Lack of education as deadly as smoking: Study estimates number of deaths attributed to low levels of education

July 8 2015

A new study by researchers at the University of Colorado, New York University, and the University of North Carolina at Chapel Hill estimates the number of deaths that can be linked to differences in education, and finds that variation in the risk of death across education levels has widened considerably.

The findings, published July 8 in the journal *PLOS ONE*, suggest that lacking [education](#) may be as deadly as being a current rather than former smoker.

"In [public health policy](#), we often focus on changing [health](#) behaviors such as diet, smoking, and drinking," said Virginia Chang, associate professor of [public health](#) at NYU's Steinhardt School of Culture, Education, and Human Development and College of Global Public Health, and associate professor of population health at NYU School of Medicine. "Education - which is a more fundamental, upstream driver of health behaviors and disparities - should also be a key element of U.S. health policy."

Low levels of education are common. More than 10 percent of U.S. adults ages 25 to 34 do not have a [high school](#) degree, while more than a quarter have some college but no bachelor's degree. Yet studies show that a higher level of education is a strong predictor of longevity due to many factors, including higher income and social status, healthier

behaviors, and improved social and psychological well being. Evidence from studies including natural experiments consistently show a strong association between [education level](#) and mortality and suggest that a substantial part of the association between education and mortality is causal.

Using the Centers for Disease Control and Prevention's National Health Interview Survey, the study team looked at data on more than a million people from 1986 to 2006 to estimate the number of deaths that could be attributed to low levels of education. Estimates of attributable mortality indicate the number of lives that could be potentially saved if adults had a higher level of education. They studied people born in 1925, 1935, and 1945 to understand how education levels affected mortality over time, and noted the causes of [death](#), including [cardiovascular disease](#) and cancer.

The researchers estimated the number of deaths in the 2010 U.S. population for two scenarios with relevance for policy: having less than a high school degree, and having some college but not a bachelor's degree. Maximizing high school graduations rates and the completion of college among those who have already entered are viable policy targets.

They found that 145,243 deaths could be saved in the 2010 population if adults who had not completed high school went on to earn a GED or high school degree, which is comparable to the estimated number of deaths that could be averted if all current smokers had the mortality rates of former smokers. In addition, 110,068 deaths could be saved if adults who had some college went on to complete their bachelor's degree.

The disparities in mortality across different levels of education widened substantially over time. For example, mortality rates fell modestly among those with high school degrees, but [mortality rates](#) fell much more rapidly among those with college degrees. As a result, encouraging high

school completion among adults who have not finished high school could save twice as many lives among those born in 1945 as compared to those born in 1925.

Deaths from cardiovascular disease played a greater role than deaths from cancer in these growing gaps in mortality and improvements in survival for well-educated people, likely due to advances in the prevention and treatment of cardiovascular disease among those with more education.

"Our results suggest that policies and interventions that improve educational attainment could substantially improve survival in the U.S. population, especially given widening educational disparities," said Patrick Krueger, assistant professor in the Department of Health & Behavioral Sciences at the University of Colorado Denver | Anschutz Medical Campus and the Institute of Behavioral Sciences at the University of Colorado Boulder. "Unless these trends change, the mortality attributable to low education will continue to increase in the future."

Healthy People 2020 - an initiative to improve Americans' health decade by decade - set goals for increasing the proportion of students completing high school by 2020. The researchers said that based on their findings, meeting these goals could have a substantial impact on future survival patterns.

"Broadly, life expectancy is increasing, but those with more education are reaping most of the benefits," Chang said. "In addition to education policy's obvious relevance for improving learning and economic opportunities, its benefits to health should also be thought of as a key rationale. The bottom line is paying attention to education has the potential to substantively reduce [mortality](#)."

Provided by New York University

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