

Changing educational attainment as a driver of cohort changes in healthy longevity: a decomposition analysis of US birth cohorts

Tianyu Shen¹, Collin Payne^{1,2} and Alyson van Raalte³

28-Jun-23

Abstract

Changing patterns of life expectancy (LE) and disability-free life expectancy (DFLE) among older adults have been extensively studied in the past. These analyses have been done both at the population level and among demographic subgroups (e.g., race/ethnicity and educational groups). However, these previous analyses do not consider how changes in the overall population composition may impact LE and DFLE. This issue is particularly pertinent for a characteristic like education, where successive cohorts have experienced substantial changes in the accessibility of higher education. In this study, we decompose the contribution of changes in the educational composition of the US population to the population-level changes in DFLE. Based on US Health and Retirement Study data from 2000 to 2020, we examine four ten-year US birth cohorts, born from 1916 to 1925 to 1946 to 1955. We see a significant increase in DFLE for females in all age groups over cohorts, but not for males. No significant decrease is seen in disabled life expectancy. The decomposition results indicate that substantial heterogeneity by educational groups underlies these population-level changes. Although the share of individuals without a high school diploma has shrunk over cohorts, these individuals are experiencing more time with disability across cohorts. Conversely, the group of individuals with a bachelor's degree or more has grown and is living longer with less disability. We then decompose these differences into the portions due to changes in initial health structure and changes in transition rates. Broadly we find that deteriorations in initial health structure of those without a high school diploma contribute to worsening DFLE in this group, while

¹ School of Demography, Australian National University

² Harvard Center for Population and Development Studies, Harvard T.H. Chan School of Public Health

³ Max Planck Institute for Demographic Research

Tianyu Shen (tianyu.shen@anu.edu.au)

Collin Payne (collin.payne@anu.edu.au)

Alyson van Raalte (vanRaalte@demogr.mpg.de)

improvements in transition rates between health states are leading to increasing DFLE among those with higher schooling attainment. This study offers insight into how heterogeneity in education results in changing disparities in health, driving cohort patterns in the population-level life and health expectancies.

Keywords: Disability-free life expectancy, decomposition, education composition, multistate life table, health and aging