Status-Based Estimates of Active Life Expectancy by Type of Initial Limitation

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Brief Abstract

Estimates of Active Life Expectancy (ALE) are generally population-based, meaning that they specify the remaining active life an individual with or without limitations can expect to have. Furthermore, in most disability research, limitation items—Activities of Daily Living (ADLs)—are treated interchangeably, such that any particular ADL is sufficient to define an individual as being disabled. In recent previous research, we produced population-based ALE estimates for each particular ADL limitation in order to determine the length of life individuals can expect to live free from each limitation. Here, we use Bayesian multistate life table methods applied to National Health Epidemiologic Followup Survey Data to generate status-based ALE estimates for persons with each particular ADL. Such tables reveal the effect of being in a particular disabled state on future active and total life expectancy. Results reveal considerable variation in these quantities across specific limitations. Implications for research on ALE are discussed.

Extended Abstract

A large and growing body of literature has estimated active life expectancy (ALE)

for elders. Such research has typically produced population-based ALE estimates,

meaning that the estimates reflect the number of years of life remaining that individuals

can expect to live free from disability, regardless of whether they are currently disabled

and regardless of which particular limitation—if any—individuals currently have. Very

little extant research has attempted to produce status-based estimates of ALE—estimates

of total life expectancy and ALE for persons in particular states at a given age. Even less

research has decomposed such estimates to determine whether ALE estimates vary

depending on *which* limitation(s) the respondent has at the onset of the study. Yet such

research is important for a better understanding of the implications of particular limitations for future total and active life expectancy.

In recent research, we constructed population-based ALE estimates for each particular activity of daily living (ADL) limitation in order to determine the length of time individuals can expect to live free of each limitation. In this research, we estimate status-based Bayesian multistate life tables in order to determine the remaining ALE for individuals with particular limitations at baseline. We use data from the National Health and Nutrition Examination Survey (NHANES) and its follow-ups, the National Health Epidemiologic Follow-up Surveys (NHEFS). The original NHANES was conducted in 1971, with approximately 34,000 respondents being followed up in 1982, 1987, and 1992 in the NHEFS. The surveys contain extensive measures of disability; specifically, they each include items for the standard ADLs that are commonly used as markers of disability. Specifically, these items include whether the respondent can feed, clothe, bathe, get in and out of bed, move around the house, and use the bathroom, by him/herself.

Our Bayesian approach to life table estimation allows for the construction of interval estimates of life table quantities, including ALE, and the method also allows for the inclusion of covariates, so that we are able to compare ALE estimates across demographic aggregates of interest. Here, we are primarily interested in estimating ALE and TLE for persons who begin the survey disabled on each particular limitation, but we include controls for sex and race so that the results can be produced for all four sex-race combinations (white, nonwhite, male, female).