

10/15/11

Examination of occupational trajectories over life course and their impact on frailty in later life*

*Extended abstract prepared for EPC 2012. Do not cite or quote

Lucie Kalousova

University of Michigan

Preliminary Abstract

Surprisingly little attention has been devoted to the study of human occupations during various points in life and their effects on physical well-being in older ages. In this paper, I first use SHARE and SHARELIFE data to construct sequential occupational calendars and then establish the relationship between the occupational trajectory and frailty that is estimated by using latent class analysis. The results will help us understand whether there is a relationship between the nature of employment trajectory and physical frailty in older age.

Background

Aging is an experience that is difficult to reduce to terms such as normal and typical. However, we have a better sense of a “successful aging.” The most commonly used definition by Rowe and Kahn has three dimensions: function, low risk of disease and disability, and active engagement with life and environment. Their work provided the framework for delineating the effects of illness from the effects of old age on physical status (Rowe & Kahn, 1987). Kaplan and others later identified predictors of successful aging. These include higher levels of physical activity, not smoking, and sociability. Adults who are displaying behaviors that are not associated with successful aging, such as seclusion, tend to have higher counts of morbidities and theoretically also a greater chance of death (Kaplan et al., 1987; Strawbridge et al.1996).

The heterogeneity inherent in the concept of successful aging is both a strength and weakness of successful aging. While it is highly theoretically flexible, successful aging is difficult to measure

10/15/11

in diverse populations and sometimes does not account for the variability in quality of life (Strawbridge et al., 2002). The successful aging concept is closely related to a more recently used concept of frailty, which has been discussed in medical circles for several decades but is rather new to the social sciences (Ahmed et al. 2007). Many definitions have been proposed to describe frailty in older adults, but perhaps the most systematic attempt to establish the “phenotype” was undertaken by Fried et al. in 2001. They identified five dimensions of frailty – shrinking, weakness, poor endurance and energy, slowness, and low physical activity level. Older adults placing in lower ranges for multiple indicators were shown to be at “a high-risk state predictive of a range of adverse health outcomes (Fried et al., 2001).” These include, for example disability, morbidity, mortality, and institutionalization (Mitniski, 2002). I argue that the relationship among various employment effects on health cannot be reduced to SES; therefore, there is a pressing need for further exploratory work on the effects of the nature of one’s occupation, corresponding sequence moment in life course. This paper conceptualizes the nature of occupation as a potential risk factor for frailty.

Data and Methods

I am using Wave 2 of the SHARE study collected in 2006 – 2007 and Wave 3 of the SHARE study (SHARELIFE) collected in 2008 – 2009. This panel includes respondents aged fifty and over from fifteen European countries. Although SHARE is a panel study, Wave 2 and Wave 3 are substantially different. Wave 3 took the innovative approach of taking a full advantage of a life calendar and therefore captured unusually accurate information about respondents’ history, including employment history. However, the health status variables that would allow me to estimate frailty were recorded in Wave 2.

In order to create my analytical sample, I am using these two in tandem. First, I link Wave 2 and Wave 3 dataset. Then, I reduce my sample to thirteen, excluding the Czech Republic and Poland, because of the atypical nature of the socialist labor market. Finally, because I am treating the dataset as a cross-sectional, I eliminate observations from the individuals who did not participate in both Wave 2 and Wave 3. Moreover, for the respondents who are still in the labor force, I only use occupational data up to year 2006. Although it is possible that this truncation could bias the

10/15/11

data, SHARE report from 2010 demonstrated no systematic non-response bias in Wave 2 and Wave 3 (Blom & Schroder, 2010).

Frailty

My main dependent variable is constructed as a latent class variable based on the technique introduced by Santos-Eggimann in 2009. I use five frailty indicators that, although not identical, resemble those used by Fried and serve as their significant indicators ($p < 0.001$). Bandeen-Roche also described this method. My latent class variable analysis yields 3 outcomes – frail, near-frail, and non-frail. These are constructed separately for men and women because their indicators tend to differ (Romero-Ortuno et al., 2010).

Occupation

My main predictor variables relate to respondents' occupation. SHARE collected very detailed data in this respect, asking about every job the respondent held for at least six months since the age of 15. I construct variables that consider several aspects of respondents occupation, including a) role (managerial or not), b) level of physical demands, c) class of job (e.g. professional), and d) industry.

Other Measures

My analysis will consider other standard covariates, such as gender, age, race, educational attainment, partnership status, and retirement status.

Next Steps

- 1) My immediate step is to use sequence analysis to help me extract the most prototypical sequences from the data.
- 2) I anticipate using ordered logit model to establish the relationship between the three frailty outcomes and occupational trajectories.
- 3) Explore the complex links between SES, education and health in light of the occupational sequences.
- 4) Perform sensitivity analysis and robustness checks.

References

- Ahmed, Nasiya, Richard Mandel, and Mindy J. Fain. 2007. "Frailty: An Emerging Geriatric Syndrome." *The American Journal of Medicine* 120(9):748-53.
- Blom, G. Annelies, and Mathis Schröder. 2010. "Sample Composition 4 Years on: Retention in SHARE Wave 3 " in *SHARELIFE Methodology*, edited by Mathis Schröder.
- Fried, Linda P., Catherine M. Tangen, Jeremy Walston, Anne B. Newman, Calvin Hirsch, John Gottdiener, Teresa Seeman, Russell Tracy, Willem J. Kop, Gregory Burke, and Mary Ann McBurnie. 2001. "Frailty in Older Adults." *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* 56(3):M146-M57.
- Kaplan, G. A., T. E. Seeman, R. D. Cohen, L. P. Knudsen, and J. Guralnik. 1987. "Mortality among the elderly in the Alameda County Study: behavioral and demographic risk factors." *American Journal of Public Health* 77(3):307.
- Mitnitski, AB, JE Graham, AJ Mogilner, and K Rockwood. 2002. "Frailty, fitness and late-life mortality in relation to chronological and biological age." *BMC Geriatr* 2:1.
- Romero-Ortuno, Roman, Cathal Walsh, Brian Lawlor, and Rose Kenny. 2010. "A Frailty Instrument for primary care: findings from the Survey of Health, Ageing and Retirement in Europe (SHARE)." *BMC Geriatrics* 10(1):57.
- Rowe, JW, and RL Kahn. 1987. "Human aging: usual and successful." *Science* 237(4811):143-49.
- Santos-Eggimann, B, A Karmaniola, L Seematter-Bagnoud, J Spagnoli, C Bula, J Cornuz, N Rodondi, P Vollenweider, G Waeber, and A Pecoud. 2008. "The Lausanne cohort Lc65+: a population-based prospective study of the manifestations, determinants and outcomes of frailty." *BMC Geriatr* 8:20.
- Strawbridge, William J., Richard D. Cohen, Sarah J. Shema, and George A. Kaplan. 1996. "Successful Aging: Predictors and Associated Activities." *American Journal of Epidemiology* 144(2):135-41.
- Strawbridge, William J., Margaret I. Wallhagen, and Richard D. Cohen. 2002. "Successful Aging and Well-Being." *The Gerontologist* 42(6):727-33.