

This PDF is a selection from a published volume from the National Bureau of Economic Research

Volume Title: Investigations in the Economics of Aging

Volume Author/Editor: David A. Wise, editor

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-90313-3; 978-226-90313-2 (cloth)

Volume URL: <http://www.nber.org/books/wise11-2>

Conference Date: May 5-8, 2011

Publication Date: May 2012

Chapter Title: Comment on "Dimensions of Health in the Elderly Population"

Chapter Authors: David R. Weir

Chapter URL: <http://www.nber.org/chapters/c12438>

Chapter pages in book: (p. 200 - 202)

References

- Barker, D. J. P. 1992. *The Fetal and Infant Origins of Adult Disease*. London: BMJ Books.
- Bartholomew, D. J. 1987. "Latent Variable Models and Factor Analysis." New York: Oxford University Press.
- Freedman, V. A., L. G. Martin, and R. F. Schoeni. 2002. "Recent Trends in Disability and Functioning Among Older Adults in the United States: A Systematic Review." *Journal of the American Medical Association* 288 (24): 3137–46.
- Knol, D. L., and M. P. Berger. 1991. "Empirical Comparison between Factor Analysis and Multidimensional Item Response Models." *Multivariate Behavioral Research* 26:457–77.
- Lamb, V. L. 1996. "A Cross-National Study of Quality of Life Factors Associated with Patterns of Elderly Disablement." *Social Science and Medicine* 42 (3): 363–77.
- Manton, K. G., and X. Gu. 2001. "Changes in the Prevalence of Chronic Disability in the United States Black and Nonblack Population above Age 65 from 1982 to 1999." *Proceedings of the National Academy of Sciences* 98 (11): 6354–59.
- Manton, K. G., E. Stallard, and L. S. Corder. 1998. "The Dynamics of Dimensions of Age-Related Disability 1982 to 1994 in the U.S. Elderly Population." *J Gerontol A Biol Sci Med Sci* 53 (1): B59–70.
- Manton, K. G., M. A. Woodbury, and H. D. Tolley. 1994. *Statistical Applications Using Fuzzy Sets*. New York: Wiley.
- Pardes, H., K. G. Manton, E. S. Lander, H. D. Tolley, A. D. Ullian, and H. Palmer. 1999. "Effects of Medical Research on Health Care and the Economy." *Science* 283 (5398): 36–37.
- Schoeni, R. F., V. A. Freedman, and R. B. Wallace. 2001. "Persistent, Consistent, Widespread, and Robust? Another Look at Recent Trends in Old-Age Disability." *Journal of Gerontology, Series B* 56 (4): S206–18.
- Verbrugge, L. M., and A. M. Jette. 1994. "The Disablement Process." *Social Science Medicine* 38:1–14.
- Woodbury, M., J. Clive, and A. Garson. 1978. "Mathematical Typology: A Grade of Membership Technique for Obtaining Disease Definition." *Computers and Biomedical Research* 11:277–98.

Comment David R. Weir

The chapter by Cutler and Landrum is concerned with trends in the health of the elderly population over the past twenty years. Health here is physical functioning and limitations; the chapter does not examine trends in disease prevalence or severity. It is rather an examination of the trend toward declining disability first identified by Kenneth Manton and colleagues using the National Long-Term Care Survey, and subsequently confirmed in a number

David R. Weir is research professor and director of the Health and Retirement Study at the University of Michigan.

For acknowledgments, sources of research support, and disclosure of the author's material financial relationships, if any, please see <http://www.nber.org/chapters/c12438.ack>.

of other data sets by Linda Martin, Robert Schoeni, and colleagues. This chapter focuses exclusively on the Medicare Current Beneficiary Survey (MCBS) from 1992 to 2007. The MCBS has advantages for some of the chapter's aims, disadvantages for others, and some unexploited advantages that are discussed later.

The key contribution of the chapter is to consider the appropriate level of aggregation of components of physical functioning to better understand the multidimensionality of this concept of health and in particular to better understand somewhat conflicting time trends of different dimensions. Survey self-reports of physical functioning and disability typically ask about a number of different specific physical actions (e.g., walking, stooping, lifting, hearing) and a number of different activities (e.g., dressing, bathing, managing money). An item-by-item accounting would be unnecessarily detailed, but the authors show that aggregating all of these items into a single index of health misses importantly distinct dimensions.

The authors use factor analysis to identify important higher-order dimensions within the set of items. This analysis largely confirms the conventional groupings into (a) limitations in activities and instrumental activities of daily living, (b) functional limitations, and (c) sensory impairments. This makes the subsequent analysis of trends in these dimensions easily interpretable to most readers familiar with the disability literature but it does not say whether the estimated factors deviate in any significant way from the traditional aggregates. All three factors show declines in the early 1990s, to about 1998. From that point decline continues and perhaps accelerates in sensory impairments, slows down in ADL/IADL difficulties, and essentially stops in functional limitations. These trends are generally similar for all age groups, but an interesting decomposition of the contributions of different age groups to the overall trends shows that the oldest-old (eighty-five and over) contribute disproportionately to the gains.

The authors spend a great deal of effort demonstrating that neither changes in selective recruitment into nor attrition from the MCBS can account for the trends they see. This is comforting but not surprising considering that MCBS can sample from the entire population of Medicare beneficiaries with knowledge of their health from the Medicare claims data. The analysis actually contributes more than a vindication of MCBS. By separating exits from the study into three very distinct events—death, institutionalization, and dropping out of the study—they shed light on population trends as well as survey performance. Sensory impairments have no influence on death and small influence on nursing home entrance but reduce the risk of dropout, which might seem surprising given the need to hear and see to participate. This is not a model of change in impairment affecting participation—it merely says that conditional on having done the study once with an impairment you are less likely to drop out than someone without one. Functional limitations predict death, but not nursing home use or attrition.

The ADL/IADL difficulties predict all three outcomes. More importantly for the topic at hand, the coefficients in these relationships do not change very much over time. That means that the population trend to lower disability is not due to the disabled dying at greater rates, which is a more interesting finding than that MCBS is not getting (much) worse at keeping the disabled in the study.

The final stage of the analysis is to model year trends within time periods. This is given the interpretation of an aging effect even though age itself is in the model, presumably because age is fixed at age at entry into the study. The identification of this aging effect thus comes from the relatively short period of time in which individuals remain in MCBS. The pace of deterioration in health with age slowed across the time periods examined, accounting for a substantial part of the gains in average health by age.

The underlying goal of the chapter is to understand the reasons for changing health and to relate that to policy goals for the health care system. The MCBS had advantages for the basic demonstration of trends in different dimensions because it has similar items over the entire time period and covers the entire community-dwelling sixty-five and over population in each year. It is much less desirable for the kinds of longitudinal analysis the authors put it through to study changes over time in individual trajectories because participants are only in the study for a short time. Other studies, like the Health and Retirement Study (HRS), would be better for that purpose. Ultimately, though, this structure does not really help to narrow the range of explanations, which should include better health behaviors in the population, better environmental accommodation of physical limitations, and better medical care. Both the HRS and the MCBS are linked to Medicare claims, which could be used to identify the disease conditions and health shocks that contribute to disability. With that kind of data, one could ask whether disability decline was related to lower incidence of disability-producing health shocks, or to reduced disability consequences of those health shocks. Similarly, one could ask why the decline in disability seems to have stalled.