Successful aging in spite of bad habits: introduction to the special section on ‘Life style and health expectancy’

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Published online: 25 October 2008
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It was with great delight that I accepted the Editors’ invitation to create a Special Section for the *European Journal of Ageing: Social, Behavioural and Health Perspectives* (EJA) from amongst the papers given at the 19th Annual Meeting of Réseau Espérance de Vie en Santé (REVES) held in May 2007, in St. Petersburg, Florida, USA. REVES is an international organization that promotes the use of health expectancy as a population health indicator in research. Health expectancy (HE) simultaneously estimates mortality and morbidity or disability in order to quantify answers to the question of whether people are living longer with better or worse health. Whether approaching the question from an incidence or prevalence perspective, the result is an estimate of both the length of remaining life (life expectancy) and the length of remaining life one can expect to live in a healthy state (health expectancy), however defined.

HE is useful for cross-national comparisons of the health status of populations, so REVES members are also concerned with the definition, measurement, and comparison of health globally. In addition, the theme of the 2007 Meeting emphasized healthy lifestyles, which are often found to be related to both life and health expectancy throughout the developed world. Negative relationships of obesity, smoking, heavy drinking, poor diet, and lack of physical activity with morbidity and mortality have been shown in studies conducted in Scandinavia (Jensen et al. 2008; Juel 2008), the Netherlands (Franco et al. 2005), UK (Ebrahim et al. 2000) and USA (Ferrucci et al. 1999; Reed et al. 1998; Reynolds et al. 2005).

This section is designed to give EJA’s readers a snapshot of some of the best work coming out of the REVES meeting, not all of which deals directly with HE. The four papers range from an examination of changes in HE in Denmark and comparisons of HE estimations in France (Cambois et al. 2008; Jeune and Brønnum-Hansen 2008), to an analysis of health trends in Sweden (Parker et al. 2008), and a comparison of trends in health risk factors in US and Mexico (Wong et al. 2008). As such, these articles give the reader examples of the different ways REVES members approach population health, including both social and behavioral factors. In this introduction, I will briefly summarize each paper, comment on each, and draw some conclusions about population research, based on implications of these articles.

In the first article, Jeune and Brønnum-Hansen address the principal concern of REVES, health expectancy. This study examines HE in Denmark between 1987 and 2005, encompassing a period in which both improvements and deterioration in health have been observed, in Denmark and elsewhere (Brønnum-Hansen 2005, Crimmins et al. 1997). Using the Denmark Health Interview Studies (DHIS) from 1987, 1994, 2000, and 2005, the authors use prevalence methods (Sullivan 1971) to track trends in HE. Measures they use for HE include self-report of long-standing illness, report of whether the long-standing illness caused restriction in daily activities (long-standing limiting illness), functional limitations (mobility, communication), and self-rated health. Their findings indicate that, in addition to increased life expectancy for men and women, life expectancy with long-standing limiting illness, life expectancy with mobility and communication limitation, and life expectancy in fair or poor self-rated health all decreased over the period.

Along with their findings, the authors make several interesting observations. One relates to a stagnation period

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in Denmark, during which gains in life expectancy halted. The authors suggest this was a function of a relative increase in mortality among women born in the 1920s and 1930s. This is very interesting and raises an obvious question: why was there not a similar increase in mortality among men born around the same time? Another question raised is to what extent trends observed in other countries are affected by cohort-specific mortality experience.

Another observation relates to the lack of any significant change regarding life with or without long-standing illness, a concept that has been used traditionally in UK and is roughly equivalent to what researchers in US would call chronic conditions. While life with long-standing illness did not significantly change over the period examined, life with long-standing *limiting* illness did improve. The implication is that people are surviving better with long-standing illness, and the authors suggest that this may be a function of increased public supports for acute and long-term care services in the 1990s.

Cambois et al. (2008) tackle the difficult problem of reconciling data from several different surveys on disability in France, conducted during different periods, and each using slightly different definitions of disability. This is an important paper, as the issue of time, manner, and specificity of defining and measuring disability is something with which we all grapple.

In this study, the authors use four different population-based health surveys—the Health and Medical Care Survey (ESSM), the Health and Social Protection survey (ESPS), the Disability and Dependence Survey (HID), and the European Community Household Panel (ECHP) to map trends in disability-free life expectancy (DFLE) in France in the 1980s and 1990s. Measures of disability include life without severe mobility difficulties (ESPS), without personal care activity restrictions (HID), without discomfort due to illness or disability (ECHP), and without physical and sensory functional limitations (HID, ESSM), among others.

In spite of differing timeframes and measures of disability, in both men and women the study findings show remarkably consistent evidence of an increase in DFLE that largely parallels increases in total life expectancy. These findings provide some optimism in terms of making comparisons across studies, although none of us would recommend assuming this to be so in all cases.

Somewhat in contrast, Parker et al. (2008) examine time trends in functional ability in older Swedes between 1980 and 2005. In this case, HE is not addressed specifically, but of course trends in functional ability are one very important component of HE. Using data from the Annual Living Conditions Survey (ULF) for ages 65–84, Parker et al. examine trends in mobility, vision, hearing, and specific activities of daily living (ADLs) and instrumental activities of daily living (IADLs). Following up on a study that used

only two data points, and by definition demonstrated a linear trend, the authors examine the shape of trends in health, and their consistency across health measures and age groups.

Their findings indicate fairly consistent improvements in health. For all age groups (65–69, 70–74, 75–79, 80–84) and both genders, health improved as measured by increased ability to run 100 m, take a short walk, and, to a lesser extent, read a newspaper and manage housecleaning without help. The only measure that clearly showed deterioration was in the ability to hear a conversation between several people. These results mask some complexity, however. For example, the encouraging improvement in the ability to run 100 m happened almost exclusively during the first half of the study period (1980–1996/7). This was also somewhat the case with the ADL measures, in which there was clear improvement during the first half; the second half shows stagnation, and then an increase in ADL difficulties in 2004 in the overall sample.

One factor the authors mention that is rarely discussed is the fact that, although Sweden was one of the first countries with a national health care system, most older Swedes grew up before it was constituted. It is easy to forget this fact, when considering health in Sweden. That being said, another interesting facet about the data used in this study is the age cap at 84, at least until the 2002 wave of the ULF. In retrospect, of course, this was an obvious omission on the part of the study's originators and one can only speculate on how the results in this paper might have changed, had they been able to examine older adults in more detail, particularly as 85 is often considered to be the age at which ability in the cognitive and functional realms really start to break down.

This is an important paper; in my view, aside from information on health trends, its major contribution is in the discussion of the complexity of health, in particular the trends in both medical and technical interventions, changes in both the social and built environments, and implications for difference in health by gender. In addition, although functional health has generally improved, it is also clear that recent negative trends bear watching.

Last but certainly not least is the article by Wong et al. (2008) on unhealthy lifestyles in older adults in the US and Mexico. The article is exploratory, to the extent that this is a first cut at analyzing data on healthy lifestyles, comparing the Mexican Health and Aging Study (MHAS) with the US Health and Retirement Survey (HRS) data. It is relatively unique among exploratory works, however, in being a hypothesis-based study using a clearly articulated conceptual framework, something often lacking in demographic and epidemiologic research.

The authors use a combination of life course theory and economic perspectives to suggest potential differences in

healthy behaviors between the US and Mexico, based on the timing of the demographic transition. The basic thought is that population ageing and subsequent increases in chronic conditions have emerged in Mexico at a time where large portions of the population still experience questionable access to nutrition and protection from infectious diseases, in contrast to the US experience. In addition, changes in public policies relating to healthy behavior have come later in Mexico. For example, the US has been aware of the public health problem of smoking since the 1960s and has undertaken several public policy initiatives to reduce smoking for decades, where such efforts by the Mexican government are much more recent.

The authors pose three basic questions (1) did the life-style transition in health behaviors occur earlier in the US than in Mexico?; (2) are differences in the prevalence of risky health behaviors, by socioeconomic status, gender, and residence, wider in Mexico than in the US?; and (3) is the gap in the prevalence of risky health behaviors among successive birth cohorts wider in the US than in Mexico?

In order to examine these questions, the authors use the life course perspective to justify inclusion of measures of childhood health and socioeconomic status, although some of these measures are more comparable than others, comparing the two datasets. In addition, it is important to remember that this is an exploratory study, albeit a rather sophisticated one. In order to do a comparison of this type, some attempt at mixed modeling would really help to separate differences within and between the two countries. That analysis, however, the authors reserve for the future.

The answers the authors reach essentially confirm expectations—there are clear indications that the lifestyle transition toward healthier behaviors did, in fact, happen earlier in the US than in Mexico. The reason is embedded in the relative economic development of the two countries, even though they are closely linked in many ways, socially, geographically, and economically.

Conclusions reached include that there has been an earlier life style transition in the US, as an example, the move toward anti-smoking policies in the US but not in Mexico. Higher educational attainment in Mexico is associated with more smoking, the reverse of the education effect of smoking in the US. In addition, wealth has a deterrent effect on smoking in the US but none in Mexico. Similar differences are also found with obesity and physical inactivity, but not in drinking alcohol. Interestingly, this may be a function of differences in how drinking is measured. Some of my colleagues and I have recently had to re-conceptualize “heavy drinking” while comparing lifestyle behaviors between older adults in the US and Japan, due to differences in beer and sake consumption (Reynolds et al. 2008). The bottom line message is heterogeneity in lifestyles across countries, with developed

countries generally ahead of developing countries, but by no means on all accounts.

Wong et al. (2008) establish an ambitious agenda for future research which will be much anticipated, including modeling of the risk factors simultaneously, mixed models, and health outcomes resulting from these health behaviors. This future work will undoubtedly add to the discussion of global ageing in a concrete and constructive manner.

Conclusion

Among the many things that remain as major issues for researchers into global health, one of the biggest is the issue of comparability of measures, in spite of Cambois and colleagues’ results. Euro-Reves, a subsidiary of REVES, has made great strides toward standardizing the measurement of HE in Europe (EHMU 2007), something that is less advanced in the Western Hemisphere and in Asia. Other issues relate more basically to the issue of measuring health, particularly retrospective health in childhood. While self-rated health has long been known to correlate strongly with mortality, there is less evidence that childhood health measures are valid, particularly when measured retrospectively (Haas 2008). Retrospective measurement of childhood socioeconomic status can also be difficult (Hayward and Gorman 2004); international comparisons of these concepts must be viewed with caution. Nevertheless, there is increasing evidence that health in old age is highly influenced by life course factors, including education (which in most cases is completed in late adolescence or early adulthood), early health, and behavior patterns. Life course phenomena can have major ramifications on older adults’ socioeconomic status and health in later life (Brønnum-Hansen and Baadsgaard 2007, Hayward and Gorman 2004).

Finally, examinations of trends are important and allow us to monitor the health of the population on an ongoing basis. It is abundantly clear, however, that trends do change, and that often trends differ based on data used, measures chosen, and specific periods examined. Continued work on health trends, whether specifically addressing HE as in the Danish and French articles, or in trends in functioning as in the Swedish article, is needed in all countries.

As a block, these four articles give the readers of the *European Journal of Ageing* exposure to major work being done by some of the scholars involved in REVES, which is the only group of researchers devoted to the pursuit of knowledge into population health expectancy and its components. Much work remains to be done, of course, but it increasingly clear that ageing of the population and changing lifestyles, particularly trends in obesity, are facts

of life in the twenty-first century. In most developed countries, trends are toward higher rates of obesity, more fast food and consequently poorer diet, more sedentary lifestyles, and occupations that require less physical labor. Given what we already know about the impact of obesity on active life expectancy (Reynolds et al. 2005), the developed countries are likely to see reversals of improvements in health expectancy in the next few decades of the twenty-first century. It is critical that we continue to monitor population health using health expectancy as a way to quantify both the length and quality of life for our older populations.

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