



## List of references on health expectancy

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### New references with keywords and abstracts

2009

Burgio, A., Murianni, L., Folino-Gallo, P. **Differences in Life Expectancy and Disability Free Life Expectancy in Italy. A Challenge to Health Systems.** *Social Indicators Research* 2009;92(1):1-11. CB19/24  
(<http://www.springerlink.com/content/v535061575165k25/>)

HEALTH EXPECTANCY / LIFE EXPECTANCY / DISABILITY-FREE LIFE EXPECTANCY / GEOGRAPHIC COMPARISON / HEALTH POLICY / ORIGINAL CALCULATION / SULLIVAN METHOD / TRENDS / ITALY / 2005

The data from the Italian Health Interview Survey and the European Community Household Panel were analyzed by gender and geographic area. DFLE was calculated by the Sullivan method. In 2005 in Italy women have a longer life expectancy than men: 84 and 78 years, respectively. But if we consider life without disability in Italy the male disadvantage reduces: men live 85% of their years without disability, women only 75%. Geographic differences do exist because Disability Free Life Expectancy is longer in Northern and in Central regions; shorter in the South. At a European level similar data can be found: on average women live longer but they have a longer time of life with disability.

Egidi, V., Salvini, S., Spizzichino, D., Vignoli, D. **Capitolo 2: Salute e qualità della sopravvivenza [Health and Quality of Life]**. In: Onagro, F., Salvini, S., editors. Rapporto sulla popolazione – Salute e sopravvivenza. Bologna: Il Mulino; 2009. p. 33-49. (Universale Paperback) CB19/25  
([http://www.mulino.it/edizioni/universita/scheda\\_volume.php?vista=indice&ISBNART=12779](http://www.mulino.it/edizioni/universita/scheda_volume.php?vista=indice&ISBNART=12779))

HEALTH EXPECTANCY / DISABILITY-FREE LIFE EXPECTANCY / HEALTHY LIFE EXPECTANCY / QUALITY OF LIFE / ORIGINAL CALCULATION / GEOGRAPHIC COMPARISON / TRENDS / 1994 / 1999-2000 / 2004-2005

The authors calculate disability-free life expectancy and healthy life expectancy for the Italian population in 1994, 1999-2000 and 2004-2005 using data from the ISTAT. Results are presented according to age, sex, type of disability (confinement, locomotion, ADL, communication) and level of disability (without, light, severe) for the three dates.

Ekholm, O., Bronnum-Hansen, H. **Cross-national comparisons of non-harmonized**

**indicators may lead to more confusion than clarification.** *Scandinavian Journal of Public Health* 2009;37:661-663.

CB19/26

(<http://sjp.sagepub.com/cgi/content/abstract/1403494809341098v1>)

#### HEALTH EXPECTANCY / HEALTH INDICATOR / HEALTH SURVEYS / HARMONIZATION

**Aims:** A newly published study showed that the life expectancy for Danes was below the European Union (EU) average. Furthermore, the study showed that healthy life years (HLYs) at 50 years of age were much higher in Denmark than in the other EU countries in 2005. However, the results of this study should be interpreted with caution.

**Methods:** The analyses regarding HLYs were based on the global long-term activity limitation index as a measure of disability and were included in the EU Survey on Income and Living Condition (EU-SILC). In Denmark two response categories were used to assess long-term activity limitation (yes; no) compared to three levels in all other countries (severely limited; limited but not severely; none). In addition, the wording of the question in Denmark makes cross-national comparisons even more inadequate. The questions and the response categories were revised in the Danish SILC-2008.

**Results:** A comparison of the previous and the revised indicator shows that the estimated number of HLYs at 50 years of age is approximately three years lower for both men and women in 2008 than in 2005. Furthermore, in Denmark data was collected via telephone interviews or postal questionnaires. However, in almost all other countries data was collected via face-to-face interviews. It is well known that the mode of data collection may affect response distributions.

**Conclusions:** Results based on non-harmonized indicators should always be interpreted cautiously to avoid policy-makers and others reaching erroneous conclusions

Pinhero, P., Krämer, A. **Calculation of health expectancies with official data for North Rhine Westphalia, a federal state of Germany, 1999-2005.** *Population Health Metrics* 2009;7(4)

CB19/27

(<http://www.pophealthmetrics.com/content/pdf/1478-7954-7-4.pdf>)

#### ORIGINAL CALCULATION / SULLIVAN METHOD / NORTH RHINE WESTPHALIA / GERMANY / 1999-2005

**Objectives:** The main objectives of this study were to prove the feasibility of health expectancy analyses with regional administrative health statistics and to explore the utility of the calculated health expectancies in describing the health state of the population living in North Rhine-Westphalia, a Federal State of Germany.

**Materials and methods:** Administrative population and mortality data as well as health data on disability and long-term care provided by public services were used to calculate: a) the life expectancy and b) the health expectancies Severe-Disability-Free Life Expectancy (SDFLE) and Long-Term-Care-Free Life Expectancy (LTCFLE) from 1999 to 2005. Calculations were done using the Sullivan method.

**Results:** SDFLE at birth was 69.9 years (males 66.2 and females 73.2 years) in 1999 and it increased to 71.7 years (males 68.6 and females 74.7 years) in 2005. The proportion of the SDFLE on the total life expectancy at birth was 89.8% (males 88.6 and females 90.8%) in 1999 and 90.7% (males 89.8 and females 91.4%) in 2005. LTCFLE at birth was 75.3 years (males 73.1 and females 77.5 years) in 1999 and it increased to 76.6 years (males 74.7 and females 78.6 years)

in 2005. The proportion of the LTCFLE on the total life expectancy at birth was 96.8% (males 97.8 and females 96.1%) in 1999 and 96.8% (males 97.8 and females 96.2%) in 2005.

**Discussion and conclusion:** Both health expectancies indicate an improvement in the quantity as well as in the quality of healthy life for the population living in North Rhine Westphalia and therefore suggest a compression of morbidity from 1999 to 2005. The findings however have several limitations in their sensitivity, since we applied dichotomous valuations to the health states. In addition, the results are restricted to comparisons over time because the morbidity concepts do not allow for comparisons with populations other than the German one. Refined calculations with other summary measures of population health and with health data on other morbidity concepts are therefore reasonable.

Reynolds, S. L., McIlvane, J. M. **The impact of obesity and arthritis on active life expectancy in older Americans.** *Obesity* 2009;17(2):363-9. CB19/28  
(<http://www.nature.com.gate2.inist.fr/oby/journal/v17/n2/pdf/oby2008534a.pdf>)

HEALTH EXPECTANCY / ACTIVE LIFE EXPECTANCY (ALE) / DISABILITY / OBESITY / MUSCULOSKELETAL DISEASE / ORIGINAL CALCULATION / MULTI-STATE LIFE TABLE METHOD / INTERPOLATION OF MARKOV CHAINS (IMaCh) / USA / 1993-1998

This article examines the relationship of obesity and arthritis to length of life and length of disabled life in older American men and women. Secondary data analysis is conducted on three waves of the Asset and Health Dynamics Among the Oldest Old (AHEAD) survey (n = 7,381). Using integrated Markov chains, total, active, and disabled life expectancy in Americans aged > or =70 is estimated, with and without obesity and arthritis. Results indicate that neither obesity nor arthritis is related to the length of life for older men and women, alone or in combination. However, both conditions are significantly individually associated with increased length of disabled life in older men (1.4 years attributable to obesity; 1.2 years to arthritis at age 70; P < 0.05) and women (1.7 years attributable to obesity; 2.1 years to arthritis at age 70; P < 0.05). In addition, the combination of the two is significantly related to decreased active life, with nearly 50 and 60% of remaining life for 70-year-old men and women lived with disability, respectively (P < 0.05). Coupled with the fact that both obesity and arthritis are growing in prevalence, these findings represent one of the few clearly negative health trends in older adults today. These results should provide incentives for health-care professionals to make concerted efforts to address both conditions in clinical settings.

Robine, J.-M., Saito, Y., Jagger, C. **The relationship between longevity and healthy life expectancy.** *Quality in Ageing* 2009;10(2):5-14. CB19/29  
(<http://metapress.com/content/wr2ng2465hr06k27/fulltext.pdf>)

HEALTH EXPECTANCY / LIFE EXPECTANCY / LONGEVITY / MORBIDITY / DISABILITY / HEALTH STATUS

What is the relationship between longevity and health? Health expectancies were developed more than 30 years ago specifically to answer this question. It may therefore be the time to try to answer this question, though it is worth noting that the question implies a unidirectional relationship. Almost no one questions the positive association between health and longevity. It is expected that healthy, robust people will live, on average, longer than frail people. This heterogeneity in terms of robustness/frailty may explain the shape of the mortality trajectory with age, ie. the oldest old

seem to follow a lower mortality schedule (Vaupel et al, 1979). On the other hand, many people wonder about the relationship between longevity and health. Are we living longer because we are in better health? Are we living longer in good health? Or are we merely surviving longer whatever our health status? In other words, can we live in good health as long as we can survive? And this is exactly the purpose of health expectancies: monitoring how long people live in various health statuses (Sanders, 1964; Sullivan, 1971; Robine et al, 2003a).

Wolf, D. A., Gill, T. M. **Modeling transition rates using panel current-status data: how serious is the bias ?** *Demography* 2009;46(2):371-386. CB19/32

#### ACTIVE LIFE EXPECTANCY (ALE) / MATHEMATICAL MODEL / DISABILITY / TRANSITIONS / INTERPOLATION OF MARKOV CHAINS (IMaCh) / USA

Study of evaluating how well the “Embedded Markov Chain (EMC)” estimation approach, the one built into the IMaCh program, performs.

In this work, the authors had access to a lengthy series of disability assessments taken at one-month intervals, with which it was possible to estimate the “true” model that IMaCh attempts to approximate using the Markov assumption (with the Markov transition matrix raised to some power associated with the width of the observation interval). They then took every 12 months’ data (e.g., producing data of the form found in the MCBS) and, after that, took every 24 months’ data (e.g., producing data of the form found in LSOA or HRS). They then used the EMC approach to try to estimate the 1-month transition-probability model “embedded” in the 12- or 24-month interval data.

For purposes of further comparison, they also estimated an “event history” model, i.e., one in which it is assumed that there are no missed transitions.

The EMC estimator does a very poor job (I’d say, an unacceptably bad job) or reproducing the “truth.” Unfortunately, the event-history estimator does an equally bad (or even worse) job of reproducing the truth. On the other hand, active life expectancy comes out about the same no matter what estimator (or what observation interval) is used. Nevertheless the authors argue that active life expectancy estimates based on 12- or 24-month observation intervals should be discounted.

The authors conclude that method cannot overcome the inherent limitations of data, at least in this particular situation.

Yong, V., Saito, Y. **Trends in healthy life expectancy in Japan: 1986-2004.** *Demographic Research [Online]* 2009;20(19):467-494. CB19/23  
(<http://www.demographic-research.org/volumes/vol20/19/20-19.pdf>)

#### HEALTHY LIFE EXPECTANCY / PERCEIVED HEALTH / ORIGINAL CALCULATION / SULLIVAN METHOD / TRENDS / JAPAN / 1986-2004

This article examines the increasing life expectancy of Japanese men and women in relation to their health from 1986 to 2004. We computed healthy life expectancy for seven available time-points using the prevalence-based Sullivan method. The results showed that, for both sexes and at all ages, the gains in life expectancy prior to 1995 were mostly in years of good self-rated health, while the gains thereafter were in years of poor self-rated health. The exception was for women at age 85, among whom there was an almost continuous increase in the number of years in poor health. The proportion of life spent in different health states suggested evidence of morbidity

compression until 1995, followed by an expansion of morbidity.

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Kovacs, K. *Comments on Robine et al's paper by Katalin Kovacs*. In: Dykstra, P. A., editor. Ageing, Intergenerational solidarity and age specific vulnerabilities. Amsterdam: KNAW Press; 2008. p. 133-140. (NIDI report n°77) CB19/31  
([http://www.nidi.knaw.nl/en/publications/nidi\\_reports/](http://www.nidi.knaw.nl/en/publications/nidi_reports/))

HEALTH EXPECTANCY / ORIGINAL CALCULATION / DISABILITY / EDUCATION / HUNGARY / 2001

The authors calculate disability-free life expectancies by education for the Hungarian population using data from the Social and Demographic Panel Survey and the European Community Household Panel.

Robine, J.-M., Romieu, I., Michel, J.-P. *Trends in health expectancies*. In: Dykstra, P. A., editor. Ageing, Intergenerational solidarity and age specific vulnerabilities. Amsterdam: KNAW Press; 2008. p. 99-132. (NIDI report n°77) CB19/30  
([http://www.nidi.knaw.nl/en/publications/nidi\\_reports/](http://www.nidi.knaw.nl/en/publications/nidi_reports/))

HEALTH EXPECTANCY / TIME SERIES / DISABILITY / TRENDS / REVES

The authors analyze and interpret the available chronological series of disability-free life expectancy.

Lafortune, G., Balestat, G., Disability Study Expert Group Members. *Trends in Severe Disability Among Elderly People: Assessing the Evidence in 12 OECD Countries and the Future Implications*. Paris: OECD; 2007 (OECD Health working papers n°26). CB19/33  
(<http://www.oecd.org/dataoecd/12/25/38344447.pdf>)

DISABILITY / DEPENDENCE / ELDERLY / ACTIVITIES OF DAILY LIVING (ADL) / LONG-TERM CARE / OECD COUNTRIES

This paper assesses the most recent evidence on trends in disability among the population aged 65 and over in 12 OECD countries: Australia, Belgium, Canada, Denmark, Finland, France, Italy, Japan, the Netherlands, Sweden, the United Kingdom and the United States. The focus is on reviewing trends in severe disability (or dependency), defined where possible as one or more limitations in basic activities of daily living (ADLs, such as eating, washing/bathing, dressing, and getting in and out of bed), given that such severe limitations tend to be closely related to demands for long-term care. One of the principal findings from this review is that there is clear evidence of a decline in disability among elderly people in only five of the twelve countries studied (Denmark, Finland, Italy, the Netherlands and the United States). Three countries (Belgium, Japan and Sweden) report an increasing rate of severe disability among people aged 65 and over during the past five to ten years, and two countries (Australia, Canada) report a stable rate. In France and the United Kingdom, data from different surveys show different trends in ADL disability rates among elderly people, making it impossible to reach any definitive conclusion on the direction of the trend. One of the main policy implications that can be drawn from the findings of this study is that it would not be prudent for policymakers to count on future reductions in the prevalence of severe

disability among elderly people to offset completely the rising demand for long-term care that will result from population ageing. Even though disability prevalence rates have declined to some extent in some countries, the ageing of the population and the greater longevity of individuals can be expected to lead to increasing numbers of people at older ages with a severe disability and in need of long-term care. The results of the projection exercise to 2030 for all countries, regardless of different trends in disability prevalence, confirm this important finding.