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ORIGINAL ARTICLE

Educational inequalities in health expectancy during the financial crisis in Denmark

Henrik Brønnum-Hansen · Mikkel Baadsgaard · Mette Lindholm Eriksen · Karen Andersen-Ranberg · Bernard Jeune

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Abstract
Objectives To investigate educational differentials in health expectancy among 50-year-old Danes before and during the financial crisis.
Methods Nationwide register data on mortality were combined with data from SHARE surveys in 2006/2007 and 2010/2011 to estimate disability-free life expectancy (DFLE) and expected lifetime in self-rated good health by educational level.
Results The difference in life expectancy between 50-year-old men and women with high and low educational levels increased by 0.3 and 0.8 years, respectively. The overall educational differentials in DFLE did not change much for women, whereas for men the tendency was that DFLE increased for those with high educational level and decreased for those with less education ascending the difference by almost 2 years (from 5.9 to 7.8 years), although the difference was not statistically significant. The educational disparity in expected lifetime in self-rated good health increased by 1.3 years for men and 1.2 years for women.
Conclusions The social inequality in DFLE for men and expected lifetime in self-rated good health for both genders increased slightly during the short period. The financial crisis did not seem to indicate a change in the persistent trend of the widening social gap.

Keywords Disability-free life expectancy · Education · Health expectancy · Life expectancy · Self-rated health · Social inequality

H. Brønnum-Hansen (✉)
Department of Public Health, Faculty of Health Sciences, University of Copenhagen, Øster Farimagsgade 5, 1014 Copenhagen, Denmark
e-mail: henrik.bronnum-hansen@sund.ku.dk

M. Baadsgaard
Economic Council of the Labour Movement, Copenhagen, Denmark

M. L. Eriksen
Department of Occupational Medicine, Regional Hospital West Jutland, Herning, Denmark

K. Andersen-Ranberg · B. Jeune
Epidemiology, Biostatistics, and Biodemography, Institute of Public Health, Danish Ageing Research Centre, University of Southern Denmark, Odense, Denmark

Introduction

Several investigations have estimated short- and long-term effects of recession and unemployment on health, health behaviour and use of health care but did not reach consistent conclusions (Suhrcke and Stuckler 2012; Martikainen and Valkonen 1996; McInerney and Mellor 2012; Economou et al. 2008; Ruhm 2007; Gerdtham and Ruhm 2006; Reeves et al. 2015; Harhay et al. 2014). Obviously, the impact of economic downturns on population health differs between gender, age groups and the choice of health indicator. While younger adults might be particularly worried about the risk of job loss, the older adults might be more concerned about losing the value of retirement pension and private investments. Some studies have focused on the differences between social welfare systems in the capability to protect against the effects of unemployment or economic crises in general (Bambra and Eikemo 2009; Stuckler et al. 2009; Mackenbach 2012; Karanikolos et al. 2013; Ifanti et al. 2013; Baumbach and Gulis 2014). Most studies focused on health effects on the population on the whole but not how health of population

subgroups might respond differently to economic downturns.

The impact of the continual economic crises seems rather to aggravate than ameliorate social differentials in income and property; and studies on health effects of recessions in developed countries suggest generally increasing social inequality (Suhrcke and Stuckler 2012). Although the present financial crisis is more far-reaching than usual economic downturns, the continuously widening of the social gap in economic wealth in Denmark (Statistics Denmark 2014; Sabiers and Amini 2013) and other countries does not seem to change (Kondo 2012; McKee and Stuckler 2012). Thus, it is not likely that the crisis has a negative health effect on the well-off part of the Danish population. But worrying about diminishing pension and savings might induce worse health among those who have retired or are close to retirement age. Furthermore, the budget deficits and cutback in the public sector put a strain on those who lost their jobs and those with high risk of losing their jobs. Stressors such as risk of job loss and reduced income are associated with mental disorders, suicidal thoughts, and increased risk behaviours (smoking, drinking, and consumption of cheap food of low nutritional value) (Murphy and Athanasou 1999; Gili et al. 2013).

In 2008, the fulltime unemployment rate in Denmark was 2.5 % for men and 2.9 % for women and rose to 7.0 % for men and 5.2 % for women in 2010 (Statistics Denmark 2014). The increase among those with a low educational level was from 3.7 to 10.0 % for men and from 4.8 to 7.9 % for women. For the age group 50 years and older, it rose from 3.3 to 9.1 % and from 3.8 to 6.1 % for low educated men and women, respectively (Statistics Denmark 2014). Furthermore, among 50- to 65-year olds, earned income declined for men but increased slightly for women during the same period.

While the overall mortality decreases steadily the educational inequality in life expectancy widens in Denmark (Brønnum-Hansen and Baadsgaard 2012). Prevalence of self-reported health by educational level can add more to the description of social inequality in health. Health expectancy is a summary measure of population health that combines information about mortality and health status by dividing life expectancy into expected lifetime in different states of health. Thus, health expectancy can be considered an advanced health indicator that standardises health prevalence taking expected lifetime in each age interval into account.

The purpose of the study was to estimate changes in educational differentials in disability-free life expectancy (DFLE) and expected lifetime in self-rated good health among 50-year-old Danes. The period ranged from shortly before to shortly after the onset of the financial crisis, i.e. in the second half of 2008. Furthermore, the contributions of the mortality and morbidity effects, i.e. disability and self-rated health, to health expectancy differences between Danes with a high and a low educational level were investigated.

Methods

A widespread method to estimate health expectancy is that of Sullivan (1971), which integrates the observed prevalence of a specific health state and a life table. The most common health expectancy indicators are expected lifetime without chronic disease, disability-free life expectancy (DFLE), and expected lifetime in self-rated good health. Questions on activity limitations due to health problems and self-rated health are included in the Survey of Health, Ageing and Retirement in Europe (SHARE) which is a longitudinal collection of survey data that includes representative samples of citizens aged 50 or more. SHARE started in 2004 with its first wave and the participants have been followed biannually since then. The second wave was carried out in 2006/07, the third in 2008/09, and the fourth in 2010/11. Random samples (including people living in institutions) were interviewed by trained interviewers from the Danish National Institute of Social Research. While the first wave had too few Danish participants to achieve reliable results on educational disparities ($n = 1593$ interviews), and the third wave focused on retrospective lives (SHARELIFE), we used the second and the fourth waves of Danish SHARE data, which accurately covers the immediate time before (2006/07) and after (2010/11) the onset of the financial crisis. SHARE provides different types of weights designed to compensate for unit nonresponse and sample attrition. The choice of weight depends on whether the study design is of cross-sectional or longitudinal nature. We used weighted data for cross-sectional analyses.

The interviewers visited and interviewed 2516 persons in 2006/07 and 2287 persons in 2010/11. The participation rates were 69.0 and 61.5 %, respectively. Due to missing values, data for 2491 and 2174 participants from the surveys 2006/07 and 2010/11 were included in the study.

Disability was defined as activity limitations measured by answers to the question of the Global Activity Limitation Indicator (GALI): "For the past 6 months at least, to what extent have you been limited because of a health problem in activities people usually do?" The response categories were: 'not limited', 'limited, but not severely' (mild limitations), and 'severely limited' (severe limitations).

Self-rated health was measured by the question: "Would you say your health is excellent, very good, good, fair or poor?" The five original response categories were

Table 1 Number of individuals aged 50 or more included in the study by gender, educational level and period

	Educational level (ISCED)	Register data		SHARE data	
		Men *N* (%)	Women *N* (%)	Men *N* (%)	Women *N* (%)
2006/07	High (5–6)	188,963 (21.0)	192,266 (19.0)	426 (37.1)	488 (36.4)
	Medium (3–4)	382,728 (42.5)	308,775 (30.5)	559 (48.7)	455 (33.9)
	Low (1–2)	328,525 (36.5)	511,634 (50.5)	164 (14.3)	399 (29.7)
	All	900,216 (100)	1,012,675 (100)	1149 (100)	1342 (100)
2010/11	High (5–6)	209,116 (22.3)	223,883 (21.5)	392 (38.9)	513 (44.0)
	Medium (3–4)	411,211 (43.9)	337,705 (32.4)	488 (48.4)	381 (32.7)
	Low (1–2)	316,895 (33.8)	479,932 (46.1)	129 (12.8)	271 (23.3)
	All	937,222 (100)	1,041,520 (100)	1009 (100)	1165 (100)

Register and survey data (Denmark 2006/07 and 2010/11)

ISCED the International Standard Classification of Education, *SHARE* the Survey of Health, Ageing and Retirement in Europe

dichotomised into 'excellent, very good or good', and 'fair or poor'.

The participants were asked questions about highest level of their completed school education and further level education. From this information, levels of education were grouped into three according to the international standard classification of education (ISCED): low—primary and lower secondary education (ISCED 1–2); medium—upper secondary education (ISCED 3–4); high—tertiary education (ISCED 5-6).

Table 1 shows the numbers in the general Danish population aged 50 years or older and in the Danish SHARE population by survey year and educational level. The table demonstrates a marked skewness in participation by educational level in SHARE.

Statistics Denmark collects systematically and annually educational data from the Ministry of Education for all Danish citizens. By utilizing the unique identification code assigned to all Danes and by linking nationwide registrations of education and mortality age and gender-specific death rates by educational level were established for 2006/07 and 2010/11. From these rates, life tables were constructed for each of the three educational levels.

DFLE was estimated by Sullivan's method for each of the three educational levels (Sullivan 1971). Thus, expected number of years lived in age groups of five years were multiplied by age-specific proportions of people without or with (mild and severe) activity limitation, and expected lifetime without and with (mild or severe) activity limitation at age 50 was then calculated by adding up these years and dividing the sum by the number of survivors at age 50. Expected lifetime in self-rated good health and in self-rated fair or poor health were estimated likewise. Because death rates were not affected by sample errors as they were provided by the use of nationwide registers comprising all Danes, the fluctuations are negligible. Thus, the only source of random variation was assumed to arise from the SHARE surveys. Statistical tests were done using a Z test and 95 % confidence intervals were estimated from the formulae suggested by the International Network on Health Expectancy (Jagger et al. 2007).

To investigate educational differentials in expected lifetime without and with activity limitation or in self-rated good or less than good health, differences between Danes with a high educational level and a low educational level were decomposed to quantify the contributions made by differences in the effect of mortality and prevalence of activity limitations or self-rated fair or poor health (Nusselder and Looman 2004). Finally, results from 2006/07 and 2010/11 were compared.

Results

Life expectancy at age 50 increased by 1.0 year (from 30.8 years in 2006/07 to 31.8 years in 2010/11) for men with a high educational level. For men with a medium and a low educational level, life expectancy increased by 0.7 years (Table 2). For 50-year-old women with a high educational level, the gain in life expectancy was 1.3 years, whereas for women with a medium and a low educational level the gain was 0.6 and 0.5 years, respectively. Thus, the difference in life expectancy between the high and low educational groups increased more for women than for men, i.e. by 0.8 and 0.3 years, respectively (Table 2).

The confidence intervals shown in Table 2 clearly demonstrate that the social gap in DFLE between people with a high and a low educational level was highly significant in both survey years ($p < 0.004$). Educational differentials in DFLE did not change much for women. However, the expected lifetime with activity limitations seemed to increase among high educated women (from

Table 2 Life expectancy at age 50, expected lifetime without and with activity limitations by educational level in Denmark in 2006/07 and 2010/11

	Educational level (ISCED)	Life expectancy Years	Expected lifetime without limitations Years (95 % CI)	Expected lifetime with limitations Years (95 % CI)	Proportion of expected lifetime without limitations % (95 % CI)
Men					
2006/07	High (5–6)	30.8	20.2 (18.6–21.8)	10.6 (9.1–12.2)	65.5 (60.3–70.6)
	Medium (3–4)	28.6	18.7 (17.5–19.9)	9.9 (8.7–11.0)	65.5 (61.3–69.6)
	Low (1–2)	26.5	14.3 (12.3–16.2)	12.2 (10.2–14.2)	53.8 (46.2–61.3)
	All	28.3	17.9 (17.1–18.7)	10.4 (9.6–11.2)	63.1 (60.3–65.9)
2010/11	High (5–6)	31.8	20.8 (19.3–22.4)	11.0 (9.4–12.5)	65.5 (60.7–70.4)
	Medium (3–4)	29.3	18.2 (16.9–19.5)	11.1 (9.8–12.4)	62.1 (57.8–66.4)
	Low (1–2)	27.2	13.0 (10.7–15.3)	14.2 (11.9–16.5)	47.8 (39.4–56.3)
	All	29.3	18.1 (17.2–18.9)	11.2 (10.4–12.1)	61.7 (58.7–64.6)
Women					
2006/07	High (5–6)	33.7	22.7 (20.7–24.7)	11.0 (9.0–12.9)	67.4 (61.6–73.3)
	Medium (3–4)	32.6	18.3 (16.7–19.8)	14.3 (12.7–15.9)	56.1 (51.2–60.9)
	Low (1–2)	30.5	15.8 (14.2–17.3)	14.7 (13.2–16.3)	51.6 (46.5–56.8)
	All	31.9	18.5 (17.6–19.3)	13.4 (12.6–14.3)	57.9 (55.3–60.5)
2010/11	High (5–6)	35.0	22.9 (20.4–25.4)	12.1 (9.5–14.5)	65.6 (58.5–72.7)
	Medium (3–4)	33.2	18.3 (16.6–20.0)	14.9 (13.2–16.6)	55.1 (50.0–60.2)
	Low (1–2)	31.0	16.6 (14.7–18.5)	14.4 (12.5–16.3)	53.6 (47.4–59.8)
	All	32.8	18.8 (17.9–19.8)	14.0 (13.1–14.9)	57.4 (54.5–60.2)

ISCED the International Standard Classification of Education

11.0 to 12.1) but not among low educated women, leading to a shortening in the difference by 1.4 years (from 3.7 years in 2006/07 to 2.3 years in 2010/11). But as the broad confidence intervals indicate no changes were statistically significant.

For men, the tendency was in the direction of increasing inequality, as DFLE increased by 0.6 years (20.8–20.2) for men with a high educational level and decreased by 0.5 years (18.7–18.2) and by 1.3 years (14.3–13.0) for men with a medium and a low educational level, respectively. Therefore, the difference in DFLE between high and low educated men increased by 1.9 years (from 5.9 to 7.8 years), although this difference was not statistically significant.

Even if the overall changes in DFLE between educational groups were modest, the prevalence of mild and severe activity limitations might contribute differently to changes in the educational differentials in expected lifetime with limitations. Table 3 shows the contributions of the mortality and disability effects on the difference between high and low educational levels in expected lifetime without and with activity limitations by gender and calendar year. In men, the mortality effect did not change much, whereas the disability effect increased, particularly for severe limitations (from 2.2 to 3.5 years). In women, the mortality effect contributed more in 2010/11 than in 2006/07 reflecting the larger gain in life expectancy among women with a high educational level compared to women with a low educational level. On the other hand the disability effect moved the weight from severe to mild activity limitations.

Table 4 shows a highly significant difference between educational groups in expected lifetime in self-rated good health for both genders and survey years ($p < 0.0001$). Although the power of the study was insufficient to attain statistically significant changes over time, i.e. from 2006/07 to 2010/11, Tables 4 and 5 suggest that the educational disparity in expected lifetime in self-rated good health tends to have grown as the difference between high and low educated increased by more than 1 year (from 7.8 to 9.1 years for men, and from 8.6 to 9.8 years for women). Accordingly, the educational gap in expected lifetime in self-rated fair and poor health seems to be wider as the difference between low and high educated increased from 3.5 to 4.5 years for men and from 5.4 to 5.8 years for women (Table 5). The proportion of expected lifetime in self-rated good health tended to decrease for men with a low educational level (Table 4). It appears from Table 5 that the mortality effect for women and the health effect for both genders contributed to the increased difference in expected lifetime in self-rated

Table 3 Life expectancy and expected lifetime without and with activity limitations among 50-year olds with high and a low educational level

	Educational level (ISCED)	Life expectancy Years	Expected lifetime without limitations Years	Expected lifetime with mild limitations Years	Expected lifetime with severe limitations Years
Men					
2006/07	High (5–6)	30.8	20.2	7.2	3.4
	Low (1–2)	26.5	14.3	7.5	4.7
	Difference	4.3	5.9	−0.3	−1.3
	Mortality effect	4.3	2.1	1.3	0.9
	Disability effect	–	3.8	−1.6	−2.2
2010/11	High (5–6)	31.8	20.8	7.7	3.3
	Low (1–2)	27.2	13.0	8.3	5.9
	Difference	4.6	7.8	−0.6	−2.6
	Mortality effect	4.6	2.2	1.5	0.9
	Disability effect	–	5.6	−2.1	−3.5
Women					
2006/07	High (5–6)	33.7	22.7	7.8	3.2
	Low (1–2)	30.5	15.8	8.5	6.2
	Difference	3.2	6.9	−0.7	−3.0
	Mortality effect	3.2	1.6	1.0	0.6
	Disability effect	–	5.3	−1.7	−3.6
2010/11	High (5–6)	35.0	22.9	9.0	3.1
	Low (1–2)	31.0	16.6	10.6	3.8
	Difference	4.0	6.3	−1.6	−0.7
	Mortality effect	4.0	1.9	1.4	0.7
	Disability effect	–	4.4	−3.0	−1.4

Educational difference decomposed into contributions from mortality and disability effects, Denmark in 2006/07 and 2010/11

ISCED the International Standard Classification of Education

good health between high and low educated 50-year olds from 2006/07 to 2010/11.

Discussion

For both genders, the social gap in expected lifetime in self-rated good health increased by more than 1 year during the relative short period of 4–5 years, although the increase was not statistically significant. Social inequality in DFLE also increased for men (by almost 2 years between high and low educated) and the decomposition result suggests that, in particular, years lived with severe activity limitations increased for men with a low educational level. The DFLE pattern for women was different as the educational difference in expected lifetime without activity limitations was reduced and the inequality in years with severe limitations decreased.

Although expected lifetime in self-rated good health and DFLE estimated on the basis of SHARE data improved for both genders in Denmark (Jeune et al. 2015), the results of the present study suggest social disparities in healthy life expectancy trends indicating a continual increase in social inequality (Brønnum-Hansen and Baadsgaard 2008). A special characteristic of the Danish welfare state is the flexicurity system, which is a combination of a low employment protection, a relatively high level of social security, and an active labour market policy. The results do not indicate that this system diminishes the possible impact of the financial crisis on the social gap in expected lifetime in self-rated good health. Figure 1 depicts estimates from the present study and results based on data from the previous study on social inequality in health expectancy (Brønnum-Hansen and Baadsgaard 2008). The figure indicates continuously increasing educational differentials in expected lifetime in self-rated good health. But because the answer categories of the self-rated health question and the design and data collection procedure differed between the Danish Health Interview Surveys (DHIS) (2000 and 2005) and the SHARE surveys (2006/07 and 2010/11), the absolute values cannot be compared directly. This is the reason why the curves for DHIS and SHARE are not connected as shown in Fig. 1.

Table 4 Life expectancy at age 50, expected lifetime in self-rated good and fair or poor health by educational level in Denmark in 2006/07 and 2010/11

	Educational level (ISCED)	Life expectancy Years	Expected lifetime in self-rated good health Years (95 % CI)	Expected lifetime in self-rated fair or poor health Years (95 % CI)	Proportion of expected lifetime in self-rated good health % (95 % CI)
Men					
2006/07	High (5–6)	30.8	24.7 (23.3–26.1)	6.1 (4.7–7.5)	80.2 (75.7–84.7)
	Medium (3–4)	28.6	22.0 (21.0–23.1)	6.5 (5.5–7.5)	77.2 (73.6–80.7)
	Low (1–2)	26.5	16.9 (14.9–18.9)	9.6 (7.6–11.6)	63.8 (56.3–71.2)
	All	28.3	21.6 (20.9–22.3)	6.7 (6.0–7.4)	76.3 (73.7–78.8)
2010/11	High (5–6)	31.8	26.0 (24.6–27.4)	5.8 (4.5–7.2)	81.7 (77.4–86.0)
	Medium (3–4)	29.3	22.5 (21.4–23.6)	6.8 (5.6–7.9)	76.9 (73.1–80.7)
	Low (1–2)	27.2	16.9 (14.6–19.1)	10.3 (8.1–12.6)	62.0 (53.7–70.2)
	All	29.3	22.5 (21.7–23.2)	6.8 (6.0–7.6)	76.7 (74.1–79.4)
Women					
2006/07	High (5–6)	33.7	27.6 (25.9–29.3)	6.1 (4.3–7.8)	82.0 (76.8–87.1)
	Medium (3–4)	32.6	23.2 (21.7–24.7)	9.4 (7.9–10.9)	71.2 (66.6–75.7)
	Low (1–2)	30.5	19.0 (17.5–20.5)	11.5 (10.0–13.0)	62.3 (57.3–67.3)
	All	31.9	22.9 (22.1–23.7)	9.0 (8.2–9.8)	71.9 (69.4–74.3)
2010/11	High (5–6)	35.0	29.1 (26.9–31.3)	5.9 (3.7–8.1)	83.1 (76.8–89.4)
	Medium (3–4)	33.2	24.5 (23.0–26.1)	8.7 (7.2–10.2)	73.8 (69.3–78.4)
	Low (1–2)	31.0	19.3 (17.4–21.2)	11.7 (9.8–13.6)	62.3 (56.2–68.5)
	All	32.8	24.3 (23.5–25.2)	8.5 (7.7–9.3)	74.1 (71.5–76.7)

ISCED the International Standard Classification of Education

The hardship due to the financial crisis has been less serious against the overall Danish population than the southern European populations (Ifanti et al. 2013; Gili et al. 2013; Lopez et al. 2013; Zavras et al. 2013; Vandoros et al. 2013; Kentikelenis et al. 2014). In Spain, mental disorders increased among patients attending primary care and were associated with unemployment and a strained economic situation (Gili et al. 2013). A cross-national analysis displayed that increasing risk of suicide among European men was associated with unemployment and indebtedness (Reeves et al. 2015). In Spain, for instance, suicide rates increased after the onset of the financial crises and mostly among men and those of working age. In Greece, deaths by suicide increased by 45 % between 2007 and 2011 (Kentikelenis et al. 2014). The suicide rate more than halved since 1980 in Denmark, but does not seem to be influenced by the financial crisis (Dødsårsagsregisteret 2013).

In Greece, two studies on self-rated health demonstrated an association between self-rated health and the crisis (Zavras et al. 2013; Vandoros et al. 2013). The study of Zavras et al. (2013) was based on two national cross-sectional surveys conducted in 2006 and 2011 and concluded that Greeks less frequently rated their health as good in 2011 compared to 2006. During the same period, we found that expected lifetime in self-rated good health among 50-year-old Danes increased, but not for those with a low educational level among whom expected lifetime in self-rated fair or poor health tended to increase.

One limitation in this study is that the Sullivan method is not capable of detecting sudden or substantial changes in health transitions or mortality rates (Barendregt et al. 1994; Mathers and Robine 1997). The problem is that health prevalence data derived from cross-sectional surveys only implicitly reflects the dynamics of population health why past transitions may bias the health expectancy estimates because of time lags in these changes.

Another limitation is that the totals of 2491 and 2174 participants from the SHARE surveys in 2006/07 and 2010/11 included in the study and the stratification by gender, age groups and educational levels reduced the power and the possibility to attain statistical significance.

The distribution of educational level in the SHARE population (Table 1) indicates a major social differential response rate, which combined with differential health status might imply that poor health be more underreported among disadvantaged people than people in a favourable social position. If this is the case, the educational differentials would be underestimated in both surveys (Lorant et al. 2007).

Whereas the nationwide register-based information on education used to construct educational level specific life

Table 5 Life expectancy and expected lifetime in self-rated good and fair or poor health among 50-year olds with high and a low educational level

Men	Educational level (ISCED)	Life expectancy Years	Expected lifetime in self-rated good health Years	Expected lifetime in self-rated fair or poor health Years
Men				
2006/07	High (5–6)	30.8	24.7	6.1
	Low (1–2)	26.5	16.9	9.6
	Difference	4.3	7.8	−3.5
	Mortality effect	4.3	3.0	1.3
	Health effect	–	4.8	−4.8
2010/11	High (5–6)	31.8	26.0	5.8
	Low (1–2)	27.2	16.9	10.3
	Difference	4.6	9.1	−4.5
	Mortality effect	4.6	3.0	1.6
	Health effect	–	6.1	−6.1
Women				
2006/07	High (5–6)	33.7	27.6	6.1
	Low (1–2)	30.5	19.0	11.5
	Difference	3.2	8.6	−5.4
	Mortality effect	3.2	2.1	1.1
	Health effect	–	6.5	−6.5
2010/11	High (5–6)	35.0	29.1	5.9
	Low (1–2)	31.0	19.3	11.7
	Difference	4.0	9.8	−5.8
	Mortality effect	4.0	2.6	1.4
	Health effect	–	7.2	−7.2

Educational difference decomposed into contributions from mortality and health effects, Denmark in 2006/07 and 2010/11

ISCED the International Standard Classification of Education

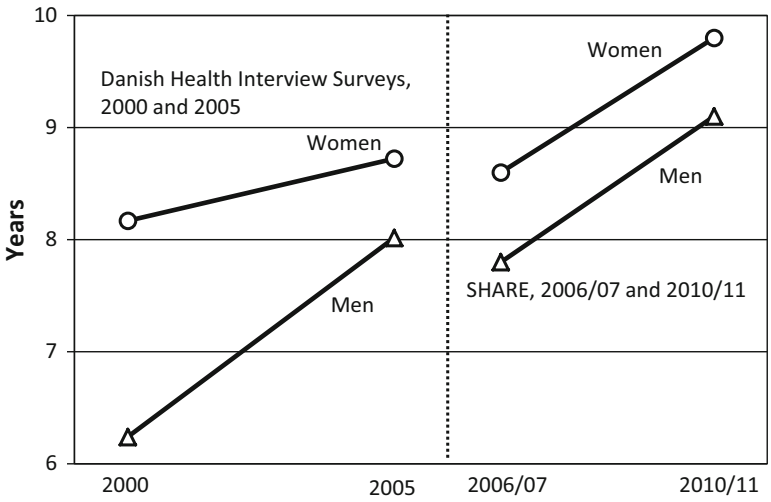

Fig. 1 Difference in expected lifetime in self-rated good health between 50-year olds with a high and a low educational level, Denmark 2000–2011. Estimates based on nationwide register data and data from the Danish Health Interview Surveys 2000 and 2005, and the Survey of Health, Ageing and Retirement in Europe (SHARE) 2006/07 and 2010/11

tables was unbiased, the information on education in SHARE was self-reported and might be influenced by a tendency of overrating (Bingley and Martinello 2014). However, this potential bias could hardly be different in the two surveys.

The persistent widening social gap in life expectancy and health expectancy in Denmark did not change during the financial crisis as we found indications of a continual increasing disparity in expected lifetime in self-rated good

health in both genders in the years after the onset of the crisis.

Compliance with ethical standards

Conflict of interest No competing interests.

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