

RESEARCH REPORT

The long shadow of work—does time since labour market exit affect the association between socioeconomic position and health in a post-working population

Martin Hyde, Ian Rees Jones

J Epidemiol Community Health 2007;61:533–539. doi: 10.1136/jech.2006.051284

See end of article for authors' affiliations

Correspondence to: Mr M Hyde, Centre for Behavioural and Social Sciences in Medicine, University College London, Wolfson Building, 48 Riding House Street, London, W1W 7EY, UK; martin.hyde@ucl.ac.uk

Accepted 13 October 2006

Objective: To test the effect of time since labour market exit (LME) on associations between socioeconomic position (SEP) and self-rated health.

Methods: Retirees from the English Longitudinal Study of Ageing (ELSA) were divided into three groups on the basis of the length of time since LME. Seven different indicators of SEP were identified: socioeconomic class, income, wealth, education, tenure, area deprivation and subjective social status. Unadjusted and mutually adjusted logistic regression analyses were performed with poor self-rated health as the outcome. The sample consisted of 2617 men (mean (SD) age 71.69 (7.04) years) and 2619 women (71.29 (8.26) years).

Results: In the unadjusted analyses, patterns of association between SEP measures and health were similar for men and women. Most SEP measures were associated with poor health, although the effects were attenuated by time since LME. In the mutually adjusted analyses, wealth was found to have a strong independent effect on health among men, especially in those groups that left the labour market ≤ 20 years ago, while for women subjective social status seemed to have the most important effect on health after LME.

Conclusions: Time since LME is an important factor to consider when studying health inequalities in a post-working population. The effect of time since LME varies according to gender and the measures of SEP used. Further work in this area should take account of age, period and cohort effects using multiple measures of SEP and more refined measures of LME.

Population ageing is now a global phenomenon.^{1,2} The proportion of the population aged ≥ 60 years in the UK has risen from 10% in 1950 to 17% today. Ensuring a healthy old age has become a principal policy goal for government³ and a major concern for most people.⁴ Although rates of reported disability and chronic illness in the older population in the UK and the USA have fallen or have at least remained stable since the 1980s,^{5–7} inequalities in health are evident, even at very old ages.⁸ In this context, understanding variations in health in later life is an increasingly important area of research. Some studies have demonstrated a convergence in the health of those from different socioeconomic positions in older age.^{9–12} This is commonly explained as the result of mortality selection or survivor effects. Conversely, there is evidence which suggests that socioeconomic inequalities in mortality^{13,14} and morbidity^{15–21} persist well into older ages.

The utility of measures of socioeconomic position (SEP) used with working age populations for studying health inequalities among retirees has been questioned.^{22,23} O'Reilly²⁴ compared the effects of three measures of area deprivation on the mortality rates of those aged < 75 years and those aged > 75 years in Northern Ireland. Strong associations were found between all three indices of deprivation and mortality among those aged < 75 years. However, the relationships were weaker among those aged > 75 years. He suggests that this is because many of the items that form these indices are problematic for this older age group. For example, lack of car ownership may reflect an inability or lack of desire to drive rather than poverty. Although this study is instructive in highlighting the difficulties in using established SEP measures in an older population, all three measures are taken at the ecological level and thus do not allow us to make conclusions about the importance or otherwise of individual SEP measures for health in later life. Data from the Retirement and Retirement Plans Survey in Great Britain were

used to examine relationships between seven different measures of SEP and health for those aged 55–69 years.²⁵ Although all indicators were found to be associated with health, combining either education or occupational class with a measure of area deprivation resulted in the clearest patterning of health inequalities. This accords with work done elsewhere on the importance of using multiple measures of SEP to explore health inequalities in general²⁶ and in later life in particular.^{27–29} However, these results are problematic as the sample included those in the labour market and also those who have left the labour market. Thus, there might be problems when comparing the effects between someone who is still working and someone who left the work a decade ago.

There has been comparatively little research on the relationship between SEP, length of retirement and health. The increasingly differentiated experience of retirement makes this a significant lacuna in our understanding of later life. During the 1980s and 1990s, there was a trend towards early labour market exit (LME), most notably among men, throughout many European countries.^{30–32} In the UK, the average age of LME, for men fell from 67.2 years in 1950 to 62.7 years in 1995.³³ Not only are men leaving the labour market earlier but the means by which they are leaving have also become more varied.^{34,35} This is potentially important as different pathways of LME have been shown to be associated with different risks of poor health in retirement.^{36–38} The situation for older women is somewhat different from their male counterparts.³⁹ Although some studies have shown that childless women are exiting the workforce at earlier ages than in the past,^{40,41} female labour market participation in later life has increased in many West European countries and North America. However, this is a

Abbreviations: ELSA, English Longitudinal Study of Ageing; IMD, Index of Multiple Deprivation; LME, labour market exit; SEP, socioeconomic position

Table 1 Distribution of respondents in each of the labour market exit groups by sex, marital status, social class, income quintiles, wealth quintiles, area deprivation quintile, educational qualification, subjective status and tenure

	<10 years	10–19 years	≥20 years
Female	47.68	50.18	67.85
Married or cohabiting	70.34	57.18	42.93
Managerial and professional occupations	33.81	29.04	23.09
Intermediate occupations	21.01	19.94	24.11
Routine and manual occupations	45.14	50.97	52.80
Lowest income quintile	21.36	24.83	32.66
2nd lowest income quintile	23.42	27.72	28.79
Middle income quintile	20.96	23.83	20.35
2nd highest income quintile	18.78	13.57	11.80
Highest income quintile	13.96	9.47	6.41
Lowest wealth quintile	14.18	22.99	31.03
2nd lowest wealth quintile	16.90	21.83	19.23
Middle wealth quintile	20.56	19.78	18.72
2nd highest wealth quintile	23.06	19.04	16.99
Highest wealth quintile	23.77	15.78	14.04
Least deprived area	24.17	21.67	17.29
2nd least deprived area	24.04	21.15	22.99
Median deprived area	21.01	20.73	21.06
2nd most deprived area	17.48	19.94	19.23
Most deprived area	13.20	16.52	19.43
No formal education	41.61	52.60	61.65
Compulsory education	19.89	17.89	14.34
Post-compulsory education	29.44	19.15	14.34
Lowest status	9.55	11.10	12.51
Middle status	66.73	65.12	58.70
Highest status	15.21	10.47	7.93
Not an owner occupier	27.65	30.98	38.35
Base	2202	2199	935

complex process involving many subtle transitions from the informal to the formal labour market.⁴²

In this paper, we examine the relationship between SEP, time since LME and self-rated general health in a sample of English retirees. The advantages of this study over previous ones are that we have excluded those who are no longer in the labour market, thus removing the problem of potentially different meanings of occupational class for those working, and those no longer working and that we have been able to test the effects of both individual- and area level measures of SEP. Given the different historical relationships with the labour market for men and women, the different ages at which men and women become eligible for the state pension in the UK and the different rates of early LME, we decided to perform the analyses separately for the sexes. We hypothesise that all measures of SEP would be independently related to self-rated general health, but that time since LME would reduce the effect of occupation-based indicators of SEP on self-reported general health.

METHODS

The study

The data are taken from the initial version of the archived dataset of the English Longitudinal Study of Ageing (ELSA). This was accessed through the Economic and Social Data Service. ELSA is a representative sample of people aged ≥50 years living in England. It was drawn from 3 years of the Health Survey for England. Full details of the sample design and response rates for the Health Survey for England waves have been reported elsewhere.^{43–45} The response rate for the first wave of ELSA was 67%, producing a sample of 11 392 persons. Full details of the ELSA sample design and the response rates are available elsewhere.⁴⁶ For the purpose of this study, those who identified themselves as retired were included. This left

2617 men, with a mean age of 71.69 (SD 7.04) years and 2619 women, with a mean age of 71.29 (SD 8.26) years.

Independent variables

Time since LME was divided into three groups: <10 years, 10–19 years and ≥20 years. Several different measures of socioeconomic position were identified. Social class was based on the most recent occupation reported by the respondent, coded into National Statistics socioeconomic classifications. For the purpose of these analyses the three group version of the National Statistics socioeconomic classifications was used.⁴⁷ Income and non-pension wealth were transformed into quintiles. Non-pension wealth was calculated as the sum of all financial wealth, such as savings and investments, physical wealth, such as land or jewellery and housing wealth, minus any debt. Educational level was based on the respondent's highest reported qualification and recoded into three groups: no formal qualifications, compulsory education and post-compulsory education. Tenure was dichotomised into those who own their property and those who do not own their property. Subjective status was measured by asking respondents to place themselves on a ladder where the top rung represented those with the highest status in society and the bottom rung represented those with the lowest status in society. The measure has been shown to be associated with several health outcomes in studies with working age populations,⁴⁸ but has not been used among a post-working population. For the purpose of these analyses, the scale was split into tertiles. Area-level socioeconomic circumstances were measured using the Index of Multiple Deprivation (IMD).⁴⁹ These scores were then transformed into quintiles. Marital status, dichotomised into those who are either married or cohabiting against those who are not, was included along with age as potential confounders in all the models. Table 1 describes the distribution of the sample in each of the SEP categories and marital status groups.

Dependent variables

Self-reported general health was measured using a 5-point response option, which asked respondents to rate their health as excellent, very good, good, fair or poor. This was dichotomised into good health, comprising those who reported their health as excellent, very good or good, and poor health, comprising fair and poor responses.

Statistical analyses

Initially, logistic regression analyses for the likelihood of reporting poor health were performed separately for each of the seven SEP measured under investigation, controlling for age and marital status. These were performed separately for each of the LME groups for each sex. Finally, a fully adjusted model, again controlling for age and marital status, in which all the SEP measures were entered simultaneously, was run separately for each of the LME groups for each sex. All analyses were performed using SPSS V.12.1.

RESULTS

Table 2 shows the odds ratios, adjusted for age and marital status, for the risk of reporting poor general health for each of the SEP measures in the three LME groups, for men. In all three LME groups lower social class is associated with an increased risk of reporting poorer health. There is a clear inverse gradient between income and the likelihood of reporting poor health for those who left work <10 years ago and those who left 10–19 years ago. However, these associations are statistically significant only for the highest quintiles. For all three LME groups, there is a clear inverse gradient in wealth and the likelihood of reporting poor health. Although the effects are

somewhat weaker in the older LME group, those in the highest wealth quintile are still 70% less likely to report poor health than those in the lowest wealth quintile. There is some evidence of a gradient in area deprivation and of the likelihood of reporting poor health in all LME groups. For example, among those who left the labour market between 10 and 19 years ago, those in the median IMD quintile are 1.7 times more likely to report poor health as those in the least deprived areas, whereas those in the second most and most deprived areas are, respectively, 2.3 times and 2.9 times more likely. Similarly, higher educational attainment is significantly associated with a reduced likelihood of reporting poor health for all three LME groups. However, the gradient between both these SEP measures and health is slightly less clear among those who left the labour market ≥ 20 years ago. Subjective social status is associated with poorer health among those who left the labour market < 10 years ago and among those who left between 10 and 19 years ago but not among those who left the labour market ≥ 20 years ago. Finally, tenure is associated with health in all three LME groups, with non-owner occupiers at an increased risk of reporting poor health. However, unlike other SEP measures, this association seems to be strongest among those who have been out of the labour market for longest periods.

Table 3 shows the results of the same analyses for women. The pattern of associations is broadly similar to that of men. Social class, wealth, area level deprivation, educational attainment, subjective status and tenure are all associated with poor health in all three LME groups, with those in the least advantaged positions more likely to report poorer health. Similarly, the strength of some of these associations, such as IMD in particular, is somewhat attenuated with time since LME. The main difference in these analyses, compared with

those for men, is that although income shows a clear inverse gradient among those who left the labour market < 10 years ago, there are no statistically significant associations between income and poor health for the other two LME groups. Conversely, unlike men, social status continues to be statistically significantly associated with poor health among those who left the labour market ≥ 20 years ago.

Table 4 shows the results of the mutually adjusted analyses for all three LME groups for men. As can be seen, although the pattern of associations is quite similar to that of the unadjusted results, most of the associations are no longer statistically significant. The exception is wealth, which retains an independent association even after controlling for all the other SEP measures. In addition, educational qualifications has a strong independent association among those who left the labour market < 10 years ago and also among those who left between 10 and 19 years ago.

Table 5 shows the results of the mutually adjusted analyses for all three LME groups for women. Here, the pattern of associations is somewhat different than that for men.. Although having been employed in routine or manual occupations and living in the most deprived area are both associated with an increased likelihood of reporting poor health for women who left work < 10 years ago subjective social status seems to be the most important SEP measure for all three LME groups as it retains an independent effect. Interestingly, and in contradistinction to the marital status and age only analyses, income is statistically significantly associated with poor health among those who had been out of the labour market for the longest periods. Counterintuitively, those in the second lowest and middle income quintiles have a greater likelihood of reporting poor health compared with those in the lowest income quintile.

Table 2 OR and 95% CI for reporting poor general health for men

	<10 years		10–19 years		≥ 20 years	
	OR	95% CI	OR	95% CI	OR	95% CI
Managerial and professional	1	–	1	–	1	–
Intermediate	1.96	1.32 to 2.91	1.45	0.93 to 2.26	2.24	1.05 to 4.79
Routine and manual	2.11	1.54 to 2.89	2.04	1.52 to 2.75	2.25	1.35 to 3.77
Lowest income quintile	1	–	1	–	1	–
2nd lowest income quintile	1.10	0.74 to 1.64	1.02	0.70 to 1.49	1.37	0.77 to 2.46
Middle income quintile	0.96	0.64 to 1.44	0.85	0.58 to 1.27	1.59	0.82 to 3.06
2nd highest income quintile	0.84	0.55 to 1.30	0.62	0.38 to 0.99	0.80	0.37 to 1.72
Highest income quintile	0.39	0.23 to 0.67	0.60	0.36 to 0.98	0.29	0.09 to 0.94
Lowest wealth quintile	1	–	1	–	1	–
2nd lowest wealth quintile	0.69	0.45 to 1.08	0.63	0.43 to 0.94	0.60	0.32 to 1.14
Middle wealth quintile	0.43	0.27 to 0.67	0.47	0.31 to 0.71	0.32	0.17 to 0.63
2nd highest wealth quintile	0.34	0.22 to 0.52	0.34	(0.22 to 0.52)	0.29	0.14 to 0.61
Highest wealth quintile	0.24	0.15 to 0.38	0.30	0.19 to 0.48	0.29	0.13 to 0.63
Least deprived area	1	–	1	–	1	–
2nd least deprived area	1.42	0.94 to 2.15	1.38	0.90 to 2.12	1.01	0.49 to 2.08
Median deprived area	1.20	0.78 to 1.86	1.77	1.16 to 2.70	1.27	0.59 to 2.74
2nd most deprived area	2.09	1.35 to 3.22	2.35	1.54 to 3.57	2.48	1.12 to 5.50
Most deprived area	3.47	2.21 to 5.45	2.90	1.85 to 4.56	2.15	0.98 to 4.73
No formal education	1	–	1	–	1	–
Compulsory education	0.41	0.28 to 0.60	0.49	0.35 to 0.69	0.70	0.39 to 1.25
Post-compulsory education	0.37	0.27 to 0.52	0.46	0.32 to 0.65	0.39	0.20 to 0.76
Low status	1	–	1	–	1	–
Middle status	0.55	0.36 to 0.83	0.55	0.37 to 0.83	1.36	0.68 to 2.74
Highest status	0.23	0.13 to 0.41	0.32	0.19 to 0.56	0.46	0.17 to 1.22
Owner occupier	1	–	1	–	1	–
Non-owner occupier	2.06	1.55 to 2.75	1.84	1.38 to 2.46	2.36	1.45 to 3.84

All analyses are adjusted for age and marital status. Figures in bold are significant at the $p < 0.5$ level.

Table 3 OR and 95% CI for reporting poor general health for women

	>10 years		10–19 years		≥20 years	
	OR	95% CI	OR	95% CI	OR	95% CI
Managerial and professional	1	–	1	–	1	–
Intermediate	1.01	0.62 to 1.65	0.98	0.65 to 1.48	1.09	0.66 to 1.79
Routine and manual	2.70	1.83 to 3.99	1.69	1.19 to 2.42	1.89	1.21 to 2.95
Lowest income quintile	1	–	1	–	1	–
2nd lowest income quintile	0.78	0.52 to 1.16	0.90	0.62 to 1.30	1.52	1.02 to 2.27
Middle income quintile	0.55	0.35 to 0.87	1.39	0.95 to 2.02	1.62	(1.05 to 2.51)
2nd highest income quintile	0.39	0.24 to 0.65	0.80	0.50 to 1.27	0.86	(0.49 to 1.54)
Highest income quintile	0.39	0.22 to 0.69	0.61	0.33 to 1.14	0.58	0.26 to 1.28
Lowest wealth quintile	1	–	1	–	1	–
2nd lowest wealth quintile	0.93	0.58 to 1.50	0.81	0.54 to 1.21	1.13	0.72 to 1.80
Middle wealth quintile	0.72	0.45 to 1.15	0.56	0.37 to 0.83	0.64	0.40 to 1.01
2nd highest wealth quintile	0.46	0.28 to 0.75	0.42	0.27 to 0.64	0.30	0.18 to 0.50
Highest wealth quintile	0.25	0.15 to 0.44	0.37	0.23 to 0.60	0.37	0.22 to 0.64
Least deprived area	1	–	1	–	1	–
2nd least deprived area	1.70	1.06 to 2.74	1.28	0.82 to 1.97	0.69	0.40 to 1.17
Median deprived area	1.74	1.07 to 2.83	1.45	0.94 to 2.23	1.24	0.75 to 2.06
2nd most deprived area	1.71	1.04 to 2.83	1.75	1.12 to 2.72	1.43	(0.86 to 2.40)
Most deprived area	3.30	2.01 to 5.44	2.76	1.77 to 4.31	1.91	1.13 to 3.23
No formal education	1	–	1	–	1	–
Compulsory education	0.43	0.27 to 0.68	0.61	0.39 to 0.95	0.55	0.32 to 0.94
Post-compulsory education	0.39	0.26 to 0.59	0.66	0.44 to 0.98	0.45	0.27 to 0.75
Low status	1	–	1	–	1	–
Middle status	0.30	0.19 to 0.47	0.40	0.26 to 0.62	0.41	0.25 to 0.66
Highest status	0.20	0.10 to 0.38	0.20	0.10 to 0.41	0.49	0.23 to 1.07
Owner occupier	1	–	1	–	1	–
Non-owner occupier	1.65	1.20 to 2.26	1.93	1.45 to 2.58	2.12	1.53 to 2.95

All are analyses adjusted for age and marital status. Figures in bold are significant at the $p < 0.5$ level.

Table 4 OR and 95% CI for reporting poor general health for men

	<10 years		10–19 years		≥20 years	
	OR	95% CI	OR	95% CI	OR	95% CI
Managerial and professional	1	–	1	–	1	–
Intermediate	1.44	0.89 to 2.34	1.05	0.60 to 1.82	1.88	0.69 to 5.09
Routine and manual	1.05	0.67 to 1.64	1.23	0.80 to 1.88	0.86	0.39 to 1.92
Lowest income quintile	1	–	1	–	1	–
2nd lowest income quintile	1.13	0.70 to 1.81	1.05	0.67 to 1.63	1.13	0.53 to 2.40
Middle income quintile	1.17	0.72 to 1.89	1.11	0.69 to 1.77	1.51	0.65 to 3.52
2nd highest income quintile	1.31	0.77 to 2.23	0.99	0.54 to 1.81	1.23	0.45 to 3.39
Highest income quintile	0.79	0.40 to 1.54	1.41	0.73 to 2.72	0.53	0.11 to 2.44
Lowest wealth quintile	1	–	1	–	1	–
2nd lowest wealth quintile	0.63	0.36 to 1.10	0.61	0.35 to 1.05	0.53	0.18 to 1.57
Middle wealth quintile	0.53	0.29 to 0.98	0.55	0.30 to 1.03	0.33	0.10 to 1.11
2nd highest wealth quintile	0.52	0.27 to 0.99	0.45	0.23 to 0.89	0.21	0.05 to 0.81
Highest wealth quintile	0.45	0.22 to 0.92	0.39	(0.18 to 0.82)	0.44	0.10 to 1.85
Least deprived area	1	–	1	–	1	–
2nd least deprived area	1.31	0.81 to 2.12	1.26	0.77 to 2.04	0.77	0.29 to 2.06
Median deprived area	0.95	0.57 to 1.59	1.15	0.69 to 1.91	1.06	0.40 to 2.80
2nd most deprived area	1.51	0.89 to 2.56	1.44	0.86 to 2.43	1.97	0.70 to 5.54
Most deprived area	1.69	0.93 to 3.06	1.48	0.83 to 2.63	1.29	0.44 to 3.77
No formal education	1	–	1	–	1	–
Compulsory education	0.52	0.34 to 0.79	0.60	0.40 to 0.88	0.86	0.42 to 1.78
Post-compulsory education	0.60	0.39 to 0.93	0.77	0.48 to 1.25	0.92	0.37 to 2.28
Low status	1	–	1	–	1	–
Middle status	0.93	0.58 to 1.49	0.76	0.48 to 1.20	1.87	0.82 to 4.27
Highest status	0.54	0.27 to 1.05	0.59	0.31 to 1.10	0.84	0.25 to 2.81
Owner occupier	1	–	1	–	1	–
Non-owner occupier	1.27	0.84 to 1.91	0.90	0.56 to 1.44	0.85	0.31 to 2.35

All analyses are mutually adjusted and controlled for age and marital status. Figures in bold are significant at the $p < 0.5$ level.

Table 5 OR and 95% CI for reporting poor general health for women

	>10 years		10–19 years		≥20 years	
	OR	95% CI	OR	95% CI	OR	95% CI
Managerial and professional	1	–	1	–	1	–
Intermediate	0.89	0.47 to 1.68	0.83	0.46 to 1.51	1.11	0.54 to 2.30
Routine and manual	1.84	1.03 to 3.30	1.32	0.76 to 2.30	1.16	0.58 to 2.35
Lowest income quintile	1	–	1	–	1	–
2nd lowest income quintile	0.74	0.46 to 1.21	1.28	0.82 to 2.02	1.86	1.12 to 3.10
Middle income quintile	0.66	0.37 to 1.16	1.59	0.98 to 2.59	2.06	1.17 to 3.65
2nd highest income quintile	0.66	0.36 to 1.22	1.36	0.73 to 2.57	1.44	0.69 to 2.99
Highest income quintile	0.88	0.42 to 1.82	1.18	0.49 to 2.84	1.10	0.41 to 2.99
Lowest wealth quintile	1	–	1	–	1	–
2nd lowest wealth quintile	1.28	0.68 to 2.40	0.93	0.52 to 1.67	1.55	0.78 to 3.09
Middle wealth quintile	1.26	0.64 to 2.49	0.77	0.39 to 1.50	1.01	0.46 to 2.24
2nd highest wealth quintile	1.18	0.56 to 2.49	0.63	0.31 to 1.30	0.58	0.24 to 1.40
Highest wealth quintile	0.61	0.26 to 1.46	0.57	0.24 to 1.34	0.70	0.28 to 1.75
Least deprived area	1	–	1	–	1	–
2nd least deprived area	1.58	0.88 to 2.84	1.22	0.70 to 2.13	0.61	0.30 to 1.22
Median deprived area	1.56	0.85 to 2.85	1.33	0.75 to 2.35	0.81	0.41 to 1.58
2nd most deprived area	1.28	0.67 to 2.44	1.20	0.66 to 2.18	0.79	0.38 to 1.62
Most deprived area	2.44	1.26 to 4.73	1.67	0.91 to 3.08	0.77	0.35 to 1.67
No formal education	1	–	1	–	1	–
Compulsory education	0.67	0.39 to 1.17	0.98	0.59 to 1.63	0.61	0.31 to 1.19
Post-compulsory education	0.93	0.51 to 1.70	1.27	0.70 to 2.30	0.60	0.29 to 1.26
Low status	1	–	1	–	1	–
Middle status	0.48	0.29 to 0.82	0.51	0.30 to 0.84	0.56	0.32 to 0.98
Highest status	0.43	0.20 to 0.92	0.28	0.13 to 0.63	0.93	0.39 to 2.23
Owner occupier	1	–	1	–	1	–
Non-owner occupier	1.23	0.76 to 1.99	1.37	0.80 to 2.33	1.42	0.74 to 2.72

All analyses are mutually adjusted and controlled for age and marital status. Figures in bold are significant at the $p < 0.5$ level.

DISCUSSION

The results of the marital status and age only adjusted analyses partially support our hypothesis that time since LME affects the strength of association between SEP measures developed for use among working age populations and for self-reported general health. These results support the conclusion from other studies that relying on measures of social stratification based on those in the labour market for investigating inequalities in health among post-working populations can be problematic^{24–25} and that multiple SEP measures are preferable.²⁶ However, the results of the mutually adjusted analyses do not confirm our hypothesis that all SEP measures would have an independent association with self-reported health. It is quite clear that for men wealth is the most important factor for health while for women it is social status. There are three potential explanations for these findings worth considering: survivor effect, the nature of work and the historical experience of labour market attachment. Firstly, it would be impossible to neglect the possibility that the lack of any effect of occupation-based SEP, for men especially, is partly explained by the differential survival of occupational groups for these cohorts. Despite overall improvements in life, those from lower occupational socioeconomic classes still have lower life expectancy.¹³ Thus, if those from lower socioeconomic occupational groups died before LME or shortly after LME and were therefore not included in the sample, any effect of occupational class would be lost. Such selection or attrition effects are a serious concern for longitudinal research.⁵⁰ Another potential source of error could arise from the use of the respondent's most recent job as a basis for socioeconomic classification. It has been argued that older workers might move into or might be moved into lower status jobs when they are approaching LME. If this is so, then we would expect to see a narrowing of the distribution of

socioeconomic class that would lead to an underestimation of the effect of occupation on health after LME. However, the figures in table 1 clearly show that those from lower occupational groups are well represented in our sample, even among those who have been out of the labour market for longest periods.

Thus, these findings may reveal something about the nature of work and work-related risks for health that are no longer present following LME. Research has shown that those in the lower occupational groups are subjected to the most adverse working conditions.^{51–52} The lack of an effect of social class on health among those out of the labour market may be due to the elimination of these work-based risks to health. The independent association of wealth with poor health for men accords with other work that has shown the importance of wealth, over income, for assessing SEP in later life.⁵³ The importance of wealth for health can perhaps be best understood if one considers wealth to be an expression of the accumulation of life time earnings, which, in turn, are related to occupational position. In addition, it is plausible that, as the measure of wealth used in these analyses contains housing wealth, it also accounts for the effect of tenure. The independent association of education attainment suggests that there are other earlier life course factors that continue to be important much later in life. Again, this accords with much of the life course research on health inequalities.⁵⁴ Thus, we may conclude that, for men, work indirectly casts its shadow on later life, but education casts a longer shadow still.

The results of the mutually adjusted analyses for women are in line with other studies that have proposed that status differences form the basis for the biopsychosocial mechanisms that lead to inequalities in health.^{48–55–57} However, our findings are somewhat at odds with those from a sample of individuals

What is already known

- All advanced economies are experiencing population ageing.
- Evidence showing that inequalities in health persist into older age is increasing. However, the utility of SEP measures developed to detect health inequalities in working age populations has been questioned for use among those who have retired.

in work which show no evident sex differences in the effects of social status on self-reported general health.⁴⁸ This may be related to the historical experience of attachment to the labour market for these cohorts of women. Many women in this age group, especially among the older age groups, left the labour market on marriage and did not return. It is therefore plausible that occupation-based measures are of marginal importance to groups that have been outside the labour market for long periods of time. Thus, social status, which is assessed using multiple dimensions, might provide a more meaningful measure of exposure to health risks.

Finally, there are a number of limitations to our analysis. These relate to the reliance on subjective assessments of health and the SEP measures, and the cross-sectional design of the original study. The fact that both the dependent and independent variables that were used in these analyses were self-reported measures taken at the same point in time raises the possibility of common method variance in the results. In addition, any relationships found may be the product of a common underlying, unmeasured, factor such as negative affectivity. Although self-rated general health has been shown to be associated with both morbidity and mortality in a number of population samples,^{58, 59} it is important to replicate these findings with other health measures, both self-reported and objective. A further weakness is that these analyses do not address the question of the direction of causality in the relationship between health and SEP. However, the fact that there are different patterns in the associations between the different SEP measures and poor health, within and between the LME groups as well as between the sexes, suggests that our findings have some merit and are worthy of further investigation. Hopefully, future longitudinal analyses will be able to investigate the temporal and causal sequencing of these processes. Finally, it is important to note the geographical and cultural specificity of the study. These data are taken from a population of English retirees, and it is plausible that the present results that we have found here may not be replicated in other countries, due to different historical experiences of the present cohort of retirees, different changes in the labour markets over the post-war period, and wide differences in the retirement legislation and replacement rates of state and occupational pension schemes. Hopefully, the results that we have presented will stimulate future cross-national research in this area.

CONCLUSION

The analyses presented here suggest that researchers should consider utilising a range of measures of SEP when studying inequalities in later life. Moreover, the effect of time since LME is an important factor to be accounted in any study of inequalities in later life. Time since LME may have uneven effects depending on gender and the measure of SEP being used. These points may become increasingly salient as later life becomes more differentiated and successive cohorts enter the

What this paper adds

- The results of analyses among 5236 English retirees shows that occupation-based measures of SEP are only weakly related to poor health.
- Among men wealth is the most important factor for health, whereas for women it is social status.
- These results demonstrate the importance of using appropriate measures to study inequalities in health among the retired population.

post-working population. Further research is required to look at the changing forms of inequalities in later life, taking account of age, period and cohort effects using multiple measures of SEP and more refined measures of labour market exit.

ACKNOWLEDGEMENTS

Research supported by ESRC grant RES-154-25-0007. "From Passive to Active Consumers: Ageing and Consumption in Britain 1963–1998" part of the AHRC/ESRC Cultures of Consumption Programme.

Authors' affiliations

Martin Hyde, Centre for Behavioural and Social Sciences in Medicine, University College London, London, UK

Ian Rees Jones, School of Social Sciences, University of Wales, Bangor, Gwynedd, Wales

Competing interests: None declared.

REFERENCES

- 1 UN. *World population ageing 1950–2050*. New York: UN, 2002.
- 2 Lloyd-Sherlock P. Social policy and population ageing: challenges for north and south. *Int J Epidemiol* 2002;**31**:754–7.
- 3 Department of Health. *Better health in old age*. London: COI Communications, 2004.
- 4 BBC news. Health 'the top worry as we age'. 29 Nov, 2004.
- 5 Waidmann TA, Manton KG. *Measuring trends in disability among the elderly*, An international review. Report No. : HHS-100-97-0010, New York: Urban Institute, 2000.
- 6 Jarvis C, Tinker A. Trends in old age morbidity and disability in Britain. *Ageing Soc* 1999;**19**:603–27.
- 7 Bone M. *Trends in dependency among older people in England*. London: OPCS, 1995.
- 8 McMunn A, Hyde M, Janevic M, et al. Health. In: Marmot MG, Banks J, Blundell R, et al, eds. *Health, wealth and lifestyles of the older population in England. The 2002 English longitudinal study of ageing*. London: IFS, 2003:207–48.
- 9 Arber S, Lahelma E. Inequalities in womens and mens ill-health - Britain and Finland compared. *Soc Sci Med* 1993;**37**:1055–68.
- 10 Arber S, Ginn J. Gender and nequalities in health in later life. *Soc Sci Med* 1993;**36**:33–46.
- 11 Fox AJ, Goldblatt P. *Longitudinal study: socio-demographic mortality differentials*. London: HMSO, 1982.
- 12 Townsend P, Philimore P, Beattie A. *Health and inequalities in the North*. London: Croom Helm, 1988.
- 13 Donkin A, Goldblatt P, Lynch P. Inequalities in life expectancy by social class, 1972–1999. *Health Stat Q* 2002;**15**:5–15.
- 14 Marmot MG, Shipley MJ. Do socioeconomic differences in mortality persist after retirement? 25 year follow up of civil servants from the first Whitehall study. *BMJ* 1996;**313**:1177–80.
- 15 Mayer KU, Maas I, Wagner M. Socioeconomic conditions and social inequalities in old age. In: Baltes PB, Mayer KU, eds. *The Berlin Aging Study. Aging from 70 to 100*. Cambridge: Cambridge University Press, 2001:227–55.
- 16 Breeze E, Jones DA, Wilkinson P, et al. Area deprivation, social class, and quality of life among people aged 75 years and over in Britain. *Int J Epidemiol* 2005;**34**:276–83.
- 17 Grundy E, Glaser K. Socio-demographic differences in the onset and progression of disability in early old age: a longitudinal study. *Age Ageing* 2000;**29**:149–57.
- 18 Grundy E, Sloggett A. Health inequalities in the older population: the role of personal capital, social resources and socio-economic circumstances. *Soc Sci Med* 2003;**56**:935–47.
- 19 Parker MG, Thorslund M, Lundberg O. Physical function and social-class among Swedish oldest-old. *J Gerontol B Psychol Sci Soc Sci* 1994;**49**:S196–S201.

- 20 **Rahkonen O**, Takala P. Social class differences in health and functional disability among older men and women. *Int J Health Serv* 1998;**28**:511–24.
- 21 **Breeze E**, Fletcher AE, Leon DA, *et al*. Do socioeconomic disadvantages persist into old age? Self-reported morbidity in a 29-year follow-up of the Whitehall Study. *Am J Public Health* 2001;**91**:277–83.
- 22 **Black D**, Morris JN, Smith C, *et al*. *Inequalities in health: The Black report*. London: Pelican, 1982.
- 23 **Acheson D**. *Independent inquiry into inequalities in health*. London: The Stationary Office, 1998.
- 24 **O'Reilly D**. Standard indicators of deprivation: do they disadvantage older people? *Age Ageing* 2002;**31**:197–202.
- 25 **Grundy E**, Holt G. The socioeconomic status of older adults: how should we measure it in studies of health inequalities? *J Epidemiol Community Health* 2001;**55**:895–904.
- 26 **Singh-Manoux A**, Clarke P, Marmot M. Multiple measures of socio-economic position and psychosocial health: proximal and distal measures. *Int J Epidemiol* 2002;**31**:1192–9.
- 27 **Robert S**, House JS. SES differentials in health by age and alternative indicators of SES. *J Aging and Health* 1996;**8**:359–88.
- 28 **Avlund K**, Holstein BE, Osler M, *et al*. Social position and health in old age: the relevance of different indicators of social position. *Scand J Public Health* 2003;**31**:126–36.
- 29 **Avlund K**, Holm-Pedersen P, Morse DE, *et al*. The strength of two indicators of social position on oral health among persons over the age of 80 years. *J Public Health Dent* 2005;**65**:231–9.
- 30 **Kohli M**, Rein M. The changing balance of work and retirement. In: Kohli M, Rein M, Guillemard AM, *et al*, eds. *Time for retirement. Comparative studies of early exit from the labor force*. Cambridge: Cambridge University Press, 1991:1–35.
- 31 **Guillemard AM**, Rein M. Comparative patterns of retirement—recent trends in developed societies. *Annu Rev of Socio* 1993;**19**:469–503.
- 32 **Blöndal S**, Scarpetta S. *Early retirement in OECD countries: the role of social security systems*. OECD economic studies. Vol 29. Paris: OECD, 1997.
- 33 **Blöndal S**, Scarpetta S. *Retirement decision in OECD countries*, OECD Economics Department Working Papers, No.202, ed. Geneva: OECD, 1999.
- 34 **Beatty C**, Fothergill S. The detached male labour force. In: Alcock P, Beatty C, Fothergill S, *et al*, eds. *Work to welfare. How men became detached from the labour market*. Cambridge: Cambridge University Press, 2003.
- 35 **Henkens K**, Siegers J. Employment and early retirement. In: Jasper T, Schippers J, Siegers J, van Berkel I, eds. *Working policies? Facts, analyses and policies of non participation in the Netherlands*. Groningen: Wolters Noordhoff, 1995.
- 36 **Hyde M**, Ferrie J, Higgs P, *et al*. The effects of pre-retirement factors and retirement route on circumstances in retirement: findings from the Whitehall II study. *Ageing Soc* 2004;**24**:279–96.
- 37 **Hyde M**, Hagberg J, Oxenstierna G, *et al*. Bridges, pathways and valleys: labour market position and risk of hospitalization in a Swedish sample aged 55–63. *Scand J Public Health* 2004;**32**:368–73.
- 38 **Mein G**, Martikainen P, Hemingway H, *et al*. Is retirement good or bad for mental and physical health functioning? Whitehall II longitudinal study of civil servants. *J Epidemiol Community Health* 2003;**57**:46–9.
- 39 **Danø AM**, Ejrnæs M, Husted L. Do single women value early retirement more than single men? *Labour Economics* 2005;**12**:47–71.
- 40 **Phillipson C**. *Transitions from work to retirement. Developing a new social contract*. York: Joseph Rowntree Foundation, 2002.
- 41 **Dex S**, Phillipson C. Social policy and the older worker. In: Phillipson C, Walker A, eds. *Ageing and social policy. A critical assessment*. Aldershot: Gower Publishing Company, 1986:45–60.
- 42 **Hill ET**. The labour force participation of older women: retired? working? both? *Monthly Labor Rev*, 2002; September, 39–48.
- 43 **Erens B**, Primatesta P. *Health survey for England 1998. Vol 2: Methodology and documentation*. London: HMSO, 1999.
- 44 **Erens B**, Primatesta P, Prior G. Health survey for England. *The health of ethnic minority groups 1999. Vol 2: Methodology and documentation*. London: HMSO, 2001.
- 45 **Prior G**, Deverill C, Malbut K, *et al*. *Health survey for England 2001. Vol 2: Methodology and documentation*. London: HMSO, 2003.
- 46 **Taylor R**, Conway L, Calderwood L, *et al*. *Methodology*. London: IFS, 2003.
- 47 **Rose D**, Pevalin DJ, O'Reilly K. *The national statistics socioeconomic classification: origins, development and use*. Basingstoke: Palgrave Macmillan, 2005.
- 48 **Singh-Manoux A**, Adler NE, Marmot MG. Subjective social status: its determinants and its association with measures of ill-health in the Whitehall II study. *Soc Sci Med* 2003;**56**:1321–33.
- 49 **Office for the Deputy Prime Minister**. *The English Indices of deprivation 2004*. London: HMSO, 2004.
- 50 **Dex S**. Work and life history analysis. In: Dex S, eds. *Life and work history analysis. Qualitative and quantitative developments*. London: Routledge, 1991:1–19.
- 51 **Ferrie JE**, Shipley MJ, Smith GD, *et al*. Change in health inequalities among British civil servants: the Whitehall II study. *J Epidemiol Community Health* 2002;**56**:922–6.
- 52 **Taylor A**. Psychosocial well being. In: Colhoun H, Prescott-Clarke P, eds. *Health Survey for England, 1994*. London: HMSO, 1994.
- 53 **Hardy MA**, Hazelrigg LE. Fueling the politics of age: on economic hardship across the life course—comment on Mirowsky & Ross. *Am Social Rev* 1999;**64**:570.
- 54 **Lawlor DA**, Ebrahim S, Davey Smith G. Adverse socioeconomic position across the lifecourse increases coronary heart disease risk cumulatively: findings from the British women's heart and health study. *J Epidemiol Community Health* 2005;**59**:785–93.
- 55 **Marmot M**. *Status syndrome*. London: Bloomsbury, 2005.
- 56 **Marmot M**, Wilkinson RG. Psychosocial and material pathways in the relation between income and health: a response to Lynch *et al*. *BMJ* 2001;**322**:1233–6.
- 57 **Marmot MG**. Status syndrome—a challenge to medicine. *JAMA* 2006;**295**:1304–7.
- 58 **Idler EL**, Benyamini Y. Self-rated health and mortality: a review of twenty-seven community studies. *J Health Soc Behav* 1997;**38**:21–37.
- 59 **Kunst AE**, Bos V, Lahelma E, *et al*. Trends in socioeconomic inequalities in self-assessed health in 10 European countries. *Int J Epidemiol* 2005;**34**:295–305.

BNF for Children 2006, second annual edition

In a single resource:

- guidance on drug management of common childhood conditions
- hands-on information on prescribing, monitoring and administering medicines to children
- comprehensive guidance covering neonates to adolescents

For more information please go to bnfc.org