Evidence from the 2001 English Census on the contribution of employment status to the social gradient in self rated health.

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ABSTRACT

Background: Unemployment and economic inactivity are associated with poor health. There are social gradients in unemployment and economic inactivity so it was hypothesised that they may contribute to the social gradient in self rated health.

Methods: Data on employment status, socio-economic position (SEP), and self-rated heath were obtained for people of working age (25-59) who had ever worked from a 3% sample of the 2001 English census. The age adjusted prevalence differences in not good general health for four separate measures of SEP were compared to the prevalence differences obtained after additional adjustment for employment status.

Results: Prevalence differences for not good health were reduced by 50% or over when adjusting for employment status (for men ranging from 57% to 81%, for women 50% to 74%).

Discussion: The social gradient in employment status contributes greatly to the social gradient in self-reported health. Understanding why this is the case could be important for tackling social inequalities in health.

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BACKGROUND

Health varies by employment status, with unemployment and economic inactivity being associated with an increased likelihood of morbidity and mortality.[1-8] The social gradients in the risk of unemployment and economic inactivity may contribute to the social gradient in health. So, using census data, this study asks "to what extent does adjusting for employment status reduce the social gradient in self reported health amongst men and women in England"?

METHODS

A 3% sample of the 2001 English census was used (the Individual Sample of Anonymised Records).[9] The analysis sample was people of working age (25 to 59) excluding full time students, those living in communal residences (e.g hospitals) and the 1.3% of men and 3.9% of women who had never worked. We excluded the never worked as there is some evidence, particularly for men, that this group includes many people unable to work due to pre-existing health conditions.[10] The final sample sizes were 349,699 women and 349,181 men. Data on self-reported health, employment status, socio-economic position (SEP) and age were extracted. The census form is available online (http://www.statistics.gov.uk/census2001/pdfs/H1.pdf). Self rated general health was assessed in the census, for the first time in 2001, by the following question "Over the last twelve months would you say your health has on the whole been … Good? Fairly good? Not good?". The coding of employment status and four census measures of SEP are given in Table 1. Income was not measured in the census.

All analysis was conducted using Stata version 10.[11] As men and women have different overall rates and patterns of employment it was decided a priori to analyse each gender separately.

As the data is cross-sectional we focused on the prevalence of not good health by SEP. We studied the prevalence difference in not good health to ascertain the contribution of employment status to the absolute rate of not good health for each SEP group. We fitted generalised linear

models with a binomial distribution and an identity link to obtain the prevalence difference. In all analysis the "highest" SEP group is the reference. To judge the extent of inequalities by each separate measure of SEP (Models A in Table 1) and by employment status (Model C) we fitted age only adjusted models. To assess the impact of controlling for employment status on the separate age adjusted SEP models we then additionally adjusted for employment status (Models B) and calculated the % reduction in prevalence difference in each category using the formula (prevalence difference in age adjusted model – prevalence difference in age and employment adjusted model)/ (prevalence difference in age adjusted model). To assess the overall health gradient for the SEP measures (education and housing tenure) with more than two groups we also calculated the slope index of inequality. It can be regarded as a measure of the health gradient from the highest to lowest group.[12] For employment status (Model C) we additionally controlled for all measures of SEP (Model D) to assess their attenuating impact.

RESULTS

The majority of men and women were in employment although women's rate of employment was lower (Table 1). For those out of work, economic inactivity was more common than unemployment. Overall 7.6% of men and 8% of women reported not good general health. As expected in age only adjusted analysis (Models A) rates of not good health increased with lower SEP. In Models B, which additionally controlled for employment status, socio-economic differences were attenuated by 50% or over (for men ranging from 57% to 81%, for women 50% to 74%).

As an example, 5.6% of men living in owner occupied housing had not good general health compared to 19.1% of men in social rented housing, an age adjusted difference of 13% points. After further adjustment for employment status this difference reduced to 2.5% points, a reduction of 81%. The slope index of inequality for housing tenure, as an overall measure of SEP, was reduced by 81% after controlling for employment status.

Rates of not good health were higher amongst non-employed groups (Table 1, Model C). Adjusting for all measures of SEP (Table 1, Model D) attenuated the differences somewhat for those looking after the family or the home and the unemployed but made little impact for other groups.

DISCUSSION

Our results suggest that for both men and women employment status attenuates significantly SEP differences in not good health. These results suggest that the social gradient in employment status could be an important contributor to the social gradient in self rated general health. Arber using survey data also reported an important role for non employment in the association between social class and self rated health.[13] Our work extends this to a wider range of socio-economic variables and a more recent, larger and highly representative dataset as well providing a quantification of the impact.

Why employment status may play such an important role in the relationship between SEP and self rated health cannot be ascertained in this cross-sectional study. We can only suggest some reasons. The relationship may run from poor health to non-employment to low SEP. In other words health selection may be important. It is notable that the highest rate of not good health was in those describing their economic inactivity as being due to permanent sickness and disability. However, education as a SEP measure may be more robust to health selection as it is mainly achieved earlier in adult life.[14]

If employment status affects, directly or indirectly, self rated health, it is therefore more likely to be through either poverty or differences in income (employment may better reflect income differences than our other measures of SEP) or differences in health behaviours (although the evidence is more equivocal on this) or through psychosocial mechanisms such as stress.[5] Finally,

employment status may capture very well socio-economic differences across the lifecourse better than any single measure of SEP at one single point of time.[6]

In conclusion our results suggest that it will be important for tackling health inequalities to understand why the social gradient in employment status seems to contribute so much to the social gradient in health.

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Contribution

CB had the original idea that both authors subsequently developed. FP conducted the analysis and drafted the paper. Both authors contributed to subsequent revisions.

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Policy Implications

- Lack of employment explained the majority of socio-economic inequalities in self rated health. Further work is needed to understand why this is the case but interventions which find and help people retain work may be important for reducing health inequalities.

What is known on this subject
Previous studies have shown that unemployment and economic inactivity are associated with worse morbidity and mortality and that unemployment and economic inactivity are socially graded.

Unemployment and economic inactivity are therefore considered to be potentially very important social determinants of health which contribute greatly to the social gradient in health and to socio-economic health inequalities.

However, existing studies have tended to focus specifically on the health of the unemployed or inactive, not on the contribution of employment status to the social gradient in health.

What this study adds
Using data on self reported health from the 2001 English Census, this study is the first to quantify the effects of employment status on the social gradient and socio-economic inequalities in health.

In keeping with existing research, the study found that regardless of socio-economic position, people experiencing unemployment or economic inactivity have worse self rated than those in employment.

In addition, the results demonstrate that employment status contributes greatly to the social gradient in self-reported health, with unemployment and economic inactivity contributing up to 81% of the excess in self reported not good health amongst the lowest socio-economic groups.

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Table 1 Differences in prevalence of not good health general health for English men and women aged 25 to 59 in 2001.

	% of population	% not good health	Models A (age adjusted only)	Models B (age and employment status adjusted)	% reduction Models B from A	Model C (age adjusted only)	Model D (age and all SEP measures adjusted)	% reduction Models D from C
Men	**N = 349,181**							
Tenure								
Owner occupied	76.1	5.6	0	0	-			
Private rent	11.0	8.4	3.3 (3.0 to 3.5)	0.8 (0.6 to 0.9)	76			
Social rent	12.9	19.1	13.0 (12.6 to 13.4)	2.5 (2.3 to 2.8)	81			
Slope index of inequality			*17.3 (16.8 to 17.7)*	*3.3 (3.0 to 3.7)*	*81*			
Education*								
Level 4/5	24.2	3.8	0	0	-			
Level 3	6.7	5.2	1.4 (1.1 to 1.7)	0.6 (0.4 to 0.8)	57			
Level 2	17.7	5.4	1.7 (1.5 to 1.9)	0.6 (0.5 to 0.8)	65			
Level 1	20.1	5.7	2.1 (1.9 to 2.3)	0.6 (0.5 to 0.8)	71			
Other qualifications	9.6	9.9	4.3 (4.0 to 4.7)	1.5 (1.3 to 1.8)	65			
No qualifications	21.7	15.2	9.6 (9.3 to 9.9)	2.1 (1.9 to 2.2)	78			
Slope index of inequality			*9.3 (9.0 to 9.6)*	*2.3 (2.1 to 2.5)*	*75*			
Car								
Car access	87.6	6.2	0	0	-			
No car access	12.4	17.8	11.1 (10.8 to 11.5)	2.3 (2.1 to 2.6)	79			
Housing conditions								
Not overcrowded or lacking amenities	86.2	7.0	0	0	-			
Overcrowded & lacking amenities	13.8	11.3	4.2 (3.9 to 4.5)	1.3 (1.1 to 1.5)	69			
Employment status								
Employed	85.7	3.1			-	0	0	
Unemployed and seeking work	4.3	9.1				5.9 (5.5 to 6.4)	4.6 (4.2 to 5.1)	22
Retired	1.5	14.8				10.2 (9.2 to 11.2)	10.0 (9.0 to 10.9)	2
Looking after home / family	1.1	11.6				8.2 (7.1 to 9.2)	6.7 (5.7 to 7.7)	18
Permanently sick or disabled	5.1	71.0				67.1 (66.4 to 67.8)	65.5 (64.9 to 66.2)	2
Other inactive	2.4	24.5				21.2 (20.3 to 22.1)	19.9 (19.0 to 20.8)	6
Women	**N = 349,699**							
Tenure								
Owner occupied	75.7	6.3	0	0				
Private rent	9.7	8.4	3.0 (2.7 to 3.3)	1.0 (0.8 to 1.2)	67			
Social rent	14.5	16.6	10.0 (9.7 to 10.4)	3.5 (3.3 to 3.8)	65			
Slope index of inequality			*14.5 (14.1 to 15.0)*	*5.0 (4.6 to 5.3)*	*66*			
Education*								
Level 4/5	23.6	4.8	0	0				
Level 3	6.8	5.5	1.0 (0.7 to 1.3)	0.5 (0.3 to 0.8)	50			
Level 2	21.2	6.3	1.6 (1.4 to 1.8)	0.8 (0.6 to 0.9)	50			
Level 1	20.8	6.5	1.9 (1.7 to 2.1)	0.5 (0.3 to 0.7)	74			
Other qualifications	5.1	10.1	3.7 (3.2 to 4.1)	1.3 (1.0 to 1.7)	65			

No qualifications	22.6	14.7	8.1 (7.8 to 8.4)	2.1 (1.9 to 2.3)	74		
Slope index of inequality			*7.9 (7.6 to 8.2)*	*2.1 (1.9 to 2.4)*	*73*		
Car							
Car access	86.2	6.8	0	0			
No car access	13.8	15.7	8.4 (8.1 to 8.7)	2.8 (2.5 to 3.0)	67		
Housing conditions							
Not overcrowded or not lacking amenities	87.8	7.6	0	0			
Overcrowded or lacking amenities	12.2	11.1	3.6 (3.3 to 3.9)	1.7 (1.5 to 1.9)	53		
Employment status							
Employed	73.2	3.6	0			0	
Unemployed and seeking work	2.6	8.2	4.6 (4.0 to 5.1)			3.3 (2.8 to 3.9)	28
Retired	1.7	11.7	6.8 (6.0 to 7.7)			6.6 (5.7 to 7.4)	3
Looking after home / family	14.5	6.8	3.1 (2.9 to 3.3)			2.0 (1.8 to 2.2)	35
Permanently sick	4.8	70.1	65.7 (65.0 to 66.4)			64.1 (63.4 to 64.8)	3
Other inactive	3.1	18.8	14.8 (14.0 to 15.5)			13.2 (12.5 to 14.0)	11

*Education levels are based on highest qualification achieved and are as follows: No qualifications, other qualifications (not covered in the following categories), level 1 (minimal end of compulsory schooling qualifications (age 16)), level 2 (end of compulsory schooling qualifications or minimal end of post compulsory schooling qualifications (age18) or vocational equivalent), level 3 (post compulsory schooling qualifications or vocational equivalent qualifications), level 4/5 (higher education degree or vocational equivalent or professional qualification (e.g. doctor, teacher, nurse)).