Comparison of the effects of low childhood socioeconomic position and low adulthood socioeconomic position on self rated health in four European studies.

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A comparison of the effects of low childhood socio-economic position and low adulthood socio-economic position on self-rated health in four European studies.

Abstract

Background: Socio-economic inequalities in health are a persistent feature throughout Europe. Researchers and policy makers are increasingly employing a lifecourse perspective to explain these inequalities and direct policy. However there are few, if any, cross-national life-course comparisons in this area.

Methods: Associations between socioeconomic position (SEP) in childhood and in adulthood and poor self-rated health among men and women at mid-life were tested in four European studies from England (N = 3,615), France (N = 11,595), Germany (N = 4,183), and the Netherlands (N = 3,801).

Results: For women, mutually adjusted analyses showed significant associations between poor self-rated health and low SEP in both childhood and adulthood in England and the Netherlands, only low childhood SEP in Germany and neither childhood nor adulthood SEP in France. For men, mutually adjusted analyses showed significant associations between poor self-rated health and low SEP in both childhood and adulthood in France and the Netherlands, only with adult SEP in England and only with childhood SEP in Germany.

Conclusion: In most countries adult SEP was stronger than childhood SEP related to self-rated health, however childhood SEP was also related to self-rated health. There are both gender and national differences in the associations between childhood and adulthood SEP. Policies designed to reduce inequalities in health need to incorporate a lifecourse perspective which is sensitive to different national and gender issues. Ultimately, more cross-national studies are required to better understand these processes.

Key words: Social inequalities, socioeconomic position, health, Europe, lifecourse
Word Count: Abstract: 236 words; Main text: 2340

A comparison of the effects of low childhood socio-economic position and low adulthood socio-economic position on self-rated health in four European studies.

Introduction

Despite overall improvements in population health, socio-economic inequalities in health are a persistent feature of most industrialized societies [1-4]. Throughout Europe, policy makers, both at the EU and at the individual member state level, have maintained their commitment to reducing or removing these inequalities [5;6]. There is debate about whether interventions in childhood or in adulthood would be most effective in reducing health inequalities. Increasingly academic researchers and policymakers are adopting a lifecourse perspective to understand how social disadvantage can result in poor health [7;8].

The different lifecourse models have been comprehensively described and discussed elsewhere [9-12]. Whilst there is still some debate over which model best describes how disadvantage and health are connected across an individual's life, there is now a growing body of literature that points convincingly to the effects of low socio-economic position (SEP) in both childhood and adulthood on a range of health outcomes [10;13-21]. However, some other studies have found independent effects of childhood SEP only with regard to mortality [22], stroke [23] and body mass index [21]. In contrast, one other studies found only evidence of an independent effect of adult SEP [24]. With regard to self-rated health, findings indicate that disadvantage at both childhood and adulthood significantly increases the likelihood of reporting poor health [25;26].

Self-rated health is strongly related to both mortality and morbidity [27-29], and it is collected in most social surveys throughout Europe, therefore it offers the possibility of conducting cross-national comparative analyses on a reliable health indicator. Cross-national comparisons offer opportunities to better understand how social processes translate socio-economic disadvantage into poor health [2;30]. However, to our knowledge, there are no cross-national studies examining the effects of low SEP at different points in the lifecourse on health in adulthood. Our aim was to examine the association between childhood SEP, adult SEP and self-rated health assessed at mid-life in different European countries. We used four existing studies, which collected similar measures of socio-economic position and health. On the basis of prior research [25;26] we hypothesise that both low childhood SEP and low adulthood SEP will have independent effects on poor health at mid-life, but that the effects will be

greater for adult SEP. In addition, following cross-sectional cross-national results on inequalities in self-rated health [2;31], we hypothesise that there will be national differences in the relative strength of these effects.

Methods

Samples

The English sample is drawn from the English Longitudinal Study of Ageing (ELSA). ELSA is a nationally representative study of the non-institutional population aged over 50 years in England. Data on around 12,000 respondents were collected using face to face computer assisted personal interviews throughout the autumn of 2001. Fuller details of the study can be found elsewhere [32]. The French data come from the GAZEL study, which is a long-standing prospective cohort of workers at Electricité de France-Gaz de France (EDF-GDF). Around 15,000 participants have been followed since 1989, primarily through a mailed yearly questionnaire. Less than 1% of the cohort has been lost through follow-up. Details of the sample can be found elsewhere [33]. German data come from the German Socio-Economic Panel (GSOEP) which is a representative longitudinal study of individuals living in private households in Germany. The GSOEP has been carried out Western Germany since 1984. In 1990, the study expanded into the former GDR. Data are collected through face-to-face interviews, with all household members aged 16 years and over. In the present analysis, the sample was restricted to those who entered the study in 1984 and were therefore resident in Western Germany at the time. Details of the study can be found elsewhere [34]. The Dutch data came from the GLOBE study, a prospective cohort study of 18,973 men and women that started in 1991. Participants were aged 14 to 75 at study baseline and have been followed up with regard to mortality and disease incidence through municipality registries. Data were collected by postal questionnaire. Details of the study can be found elsewhere [35]. In order to make the samples as comparable as possible with each other and with previous studies, we decided to restrict them to those aged 40 to 60 years. This was possible for all samples except for ELSA, which does not include respondents aged under 50 years. The final sample sizes and the distribution of men and women and mean age of each study are presented in table 1.

Variables

Childhood SEP was operationalised using father's occupation and coded according to the Erickson-Goldthorpe and Portercarrero (EGP) classification [36]. Following Kunst and colleagues, we distinguished high and low SEP groups [31]. Respondents whose father had been either EGP class 1, 'High Service', or 2, 'Low Service', were coded as having high SEP in childhood, whilst respondents whose father had been in EGP class 3, 'Routine non-manual', 7, 'Manual supervisors', 8, 'Skilled manual', 9, 'Semi- or unskilled manual' or 10, 'Farm labourer', were coded as having had low childhood SES. Those who reported that their father had been self-employed, i.e. from class 4, 5 or 6, were excluded from these analyses. Participants' own occupation was used as a measure of adult SEP and was also coded using the EGP, following the same rules as for childhood SEP. Again the self-employed were excluded.

In three of the studies self-rated health was measured using a 5-point scale from very good to poor health. Responses were dichotomised into good health (comprising the first three responses) and poor health (comprising the last two responses). In the GAZEL study, self-rated health was measured on an 8-point scale, and the lowest third of the distribution was considered as poor health. The distributions of childhood SEP, adulthood SEP and poor health in each of the samples are presented in table 1.

Analyses

Three logistic regression models were constructed to test the effects of low SEP in childhood and in adulthood on poor self-rated health in adulthood. In the first model (model I) only childhood SEP was included. In the second model (model II) only adult SEP was included. In the third model (model III) both childhood and adulthood SEP were included together. Analyses were carried out separately for men and women, using either the Statistical Package for Social Sciences (SPSS) or Statistical Analysis System (SAS).

Table 1. Socio-demographic characteristics of the study samples.

	France	England	Germany	The Netherlands
N	11595	3615	4183	3801
Mean age (SD)	54.9 (3.2)	54.7 (2.6)	48.7 (5.8)	50.3 (5.6)
% female	26.0	57.2	46.3	29.8
% low childhood SES	34.4	63.5	53.2	78.7
% low adulthood SES	5.3	68.9	28.9	62.7
% poor self assessed health	11.0	22.5	13.8	12.6

Results

For men, in the mutually adjusted analyses, childhood SEP was related to poor self rated health independently of adult SEP related to self-rated health in France (OR 1.20), Germany (OR 1.62) and the Netherlands (OR 1.55) (Table 2), whereas for women this was the case in England (OR 1.75) and the Netherlands (OR 1.55) (Table 3). Adult SEP was related independently to self-rated health in England (OR 2.09), France (OR 1.34) and the Netherlands (OR 2.52) for men, and in England (OR 1.60), Germany (OR 1.62) and the Netherlands (OR 1.68) for women. For French women neither childhood nor adulthood SEP were related to self-rated health (Table 3).

Table 2. Association between self-rated poor health and low childhood and adult socio-economic position in men. Odds ratios and 95% confidence intervals.

	Model I: childhood SEP		Model II: adult SEP		Model III: Mutually adjusted	
	OR	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
England	**1.64**	**(1.19-2.26)**			1.36	(0.97-1.90)
			2.38	**(1.82-3.11)**	**2.09**	**(1.55-2.81)**
France	**1.22**	**(1.07-1.39)**			**1.20**	**(1.05-1.37)**
			1.38	**(1.06-1.69)**	**1.34**	**(1.06-1.69)**
Germany	**1.90**	**(1.37-2.63)**			**1.62**	**(1.03-2.53)**
			1.68	**(1.21-2.32)**	1.40	(0.95-2.05)
The Netherlands	**2.11**	**(1.47-3.05)**			**1.55**	**(1.06-2.26)**
			2.76	**(2.08-3.65)**	**2.52**	**(1.88-2.36)**

[1]) Model I: low childhood SES vs. high childhood SES; [2]) Model II: low adulthood SES vs. high adulthood SES; [3]) Model III: I and II, mutually adjusted. Figures in **bold** are significant at the $p < .05$ level.

Table 3. . Association between self-rated poor health and low childhood and adult socio-economic position in women. Odds ratios and 95% confidence intervals.

	Model I: childhood SEP		Model II: adult SEP		Model III: Mutially adjusted	
	OR	95% CI	OR	95% CI	OR	95% CI
England	**1.93**	**(1.47-2.54)**			**1.75**	**(1.33-2.32)**
			1.86	**(1.40-2.47)**	**1.60**	**(1.17-2.18)**
France	0.91	(0.75-1.12)			0.85	(0.29-2.50)
			0.85	(0.29-2.49)	0.92	(0.75-1.12)
Germany	1.04	(0.77-1.41)			0.69	(0.44-1.06)
			1.41	(0.98-2.03)	**1.62**	**(1.06-2.49)**
The Netherlands	**1.98**	**(1.27-3.10)**			**1.75**	**(1.10-2.79)**
			2.03	**(1.30-3.18)**	**1.68**	**(1.06-2.67)**

[1]) Model I: low childhood SES vs. high childhood SES; [2]) Model II: low adulthood SES vs. high adulthood SES; [3]) Model III: I and II, mutually adjusted. Figures in **bold** are significant at the $p < .05$ level.

Discussion

The persistence of socio-economic inequalities within many European countries, despite overall improvements in population health, has led many researchers and policy makers to adopt a lifecourse perspective to better understand and tackle these inequalities. However, to our knowledge, there have been no cross-national comparisons of the relationship between low childhood and low adulthood SEP on health later in life. In the absence of such a study, we attempted to explore these processes in four existing national samples by harmonising our respective measures of SEP and self-rated health. Contrary to our hypotheses, low SES during both periods was not uniformly associated with poor health in all four samples. Overall, adult SES was more consistently associated with poor health than childhood circumstances.

These findings are consistent with other studies that show variation in the extent and magnitude of social inequalities in health across industrialized countries [2]. This may be, in part, because the distributions of health and risk factors vary from country to country, and it has been suggested that the specific determinants of inequalities may not be identical in each nation [37]. However, it is interesting that the variation in the magnitude of the significant associations showed gender differences. For women, in countries where SEP is associated with poor health (England, Netherlands and Germany), there was a relative homogeneity of the

strength of the association. However, for men the strength of associations showed more variation. In addition, the results reveal interesting national differences in the gendered pattern of associations. Interestingly neither low SEP in childhood nor in adulthood was associated with poor health for women in the French sample. However this is in line with other research among women in the GAZEL study [38]. This could, in part, be due to the fact that the women in the French study are drawn from an occupational cohort whilst those in the other country studies are general population samples.

Due to the nature of the study, there are two methodological considerations that need to be taken into account. There are issues that are common to all lifecourse studies and other issues that are common to all cross-national studies. Our measures of childhood SEP relied upon retrospective recall which may be imperfect [39]. It is reassuring, then, that studies conducted in the United Kingdom and in the United States show that memories of past socioeconomic circumstances tend to be reliable [40;41]. Nonetheless, participants with the most disadvantaged circumstances may have failed to report their father's occupation: for instance ten per cent of the French sample did not indicate their father's job, and since they were more likely to report poor health (data available on request) this data was probably not missing at random. Overall, any misclassification of childhood SEP is likely to have biased our results towards the null.

Another potential limitation is that our samples were different: three were based on the general population (England, Netherlands and Germany) while one included only working men and women (France). Three of our studies were national (England, Germany and France), while one was based in the area of a large city (Netherlands). To make our samples as comparable as possible we limited the analyses to a population aged 40 to 60 and used a measure of SEP designed for international comparisons [31]. Yet, although the EGP is designed for international comparisons, the position and meaning of occupational characteristics might differ between countries and might have different implications. However by collapsing occupational categories into two broad groups, we probably reduced the risk of misclassification between countries. As Elias [42] shows regarding the ISCO88, the higher the level of aggregation of occupational classes the greater the reliability of the coding.

However this does show the difficulty of relying on a single measure of SEP. As other studies have shown using multiple measures of SEP, such as education, income or wealth, may produce more accurate estimates of the effect of poor SEP on health [43]. It has been argued that this is especially so as individuals approach retirement when the salience of occupationally based measures of SEP become weaker [44]. However few studies if any collect retro-

spective data on parental income or education given the obvious problems of recall error that this would produce. Hopefully prospective longitudinal studies could test to see if other SEP measures, such as education or income generate a similar pattern of results. Additionally there may be other factors that affect health that were not considered in the models we used. Studies from the States, for example, routinely show the effect of being non-White has on health. However in Europe, although this is an increasing issue for younger age groups, this is not a consideration amongst this age group where there is little ethnic diversity reflecting the different histories of migration of the two regions.

There are also potential limitations related to our outcome measure. Firstly, unlike the other studies GAZEL used an 8-item response option. Despite our efforts to make this as comparable with the outcomes used in the other studies as possible, by allocating the same proportion of the response distribution to poor health, there is a possibility that respondents assess their health differently when using different metrics. Reassuringly, Eriksson and colleagues found that the number of response options given when assessing general health has very little effect on the patterning of associations with standard socio-demographic characteristics [45]. Secondly, and more generally, self-rated health acts as an umbrella for a range of illnesses, many of which have different etiological periods and are therefore differentially influenced by both childhood and adult SEP. Thus studies using disease-specific outcomes are required to better understand the temporal sequencing of factors that contribute to health inequalities [46]. Additionally, health ratings may be influenced by cultural factors. As has been noted elsewhere, respondents draw upon a range of different aspects of health, for example both physical and psychological well-being, and health behaviours, when evaluating their health in general [47;48]. It is worth noting here that there are developments underway, using either objective health measures or vignettes, to try to calibrate self-reported health measures in cross-national research [49;50].

Methodological limitations notwithstanding, these analyses demonstrate the importance (and difficulties) of international comparisons for advancing our knowledge of the development of socio-economic inequalities in health across countries. For policy makers, this study has demonstrated the importance of lifetime disadvantage, and that life course disadvantage affects nations and men and women differently.

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