Socio-economic Position, Gender and Health

How Do They Interact?

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ACKNOWLEDGEMENT. Both authors are employed by the Medical Research Council of Great Britain. They thank Ellen Annandale, Doug Carroll, George Davey Smith and Carol Emslie for comments on an earlier draft of this paper.

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Journal of Health Psychology

London, Thousand Oaks and New Delhi,
ISSN: 1359–1053 Vol 2(3) 315–334

Abstract

There is a large research literature on socio-economic inequalities in health (and explanations for these inequalities); there is also a large literature on gender differences in health (and explanations for these differences). However, the two bodies of research are rarely integrated to ask, for example, whether socio-economic inequalities vary by gender, or whether gender differences vary by socio-economic position. The separation of these two research traditions may be to the detriment of theoretical development in both of them; and in particular, asymmetrical treatment of men and women in research in inequalities in health may hinder our ability to explain the mechanisms producing inequalities. This article reviews the intersection of socio-economic position and gender, and argues for more systematic and symmetrical examination of the interaction between socio-economic position and gender in the social patterning of health.

Keywords

gender, inequalities, morbidity, mortality, socio-economic status

OVER THE LAST TWO DECADES there has been a large amount of research into the patterning of health both by socio-economic status (see, e.g., Carroll, Davey Smith, & Bennett, 1996; Davey Smith, Bartley, & Blane, 1990; Davey Smith, Blane, & Bartley, 1994; Macintyre, 1986) and by gender (see, e.g., Bartley, Popay, & Plewis, 1992; Emslie, 1997; Verbrugge, 1985a, 1989). However, with a few exceptions (see, e.g., Arber, 1989, 1997; Koskinen & Martelin, 1994; Lahelma & Arber, 1994) patterns in, or explanations for, socio-economic and gender inequalities are rarely considered together. In most of the literature on socio-economic inequalities in mortality or morbidity, data have been presented for both sexes combined (Kennedy, Kawachi, & Prothrow-Stith, 1996), for one sex only (usually men e.g. Davey Smith, Neaton, Wentworth, R. Stamler, & J. Stamler, 1996a; Davey Smith, Wentworth, Neaton, R. Stamler, J. Stamler, 1996b; Drever, Whitehead, & Roden, 1996; Kandrack, Grant, & Segall, 1991, Kunst & Mackenbach, 1994), or for men and women separately but without any commentary as to whether the patterns are similar for men and women (Macintyre, 1993a).

Similarly, the literature on gender differences in mortality or morbidity rarely examines whether these differences are influenced by socio-economic position. Apart from rare exceptions (Emslie, 1997; Emslie, Hunt, & Macintyre, 1997; Marmot et al., 1991), men and women are compared in the aggregate, despite the typically very different distribution of labour force and domestic roles among men and women. Thus, while socio-economic variations are often controlled for gender, gender differences are rarely controlled for socio-economic position. Hence, explicit consideration is rarely given to the issue of whether socio-economic gradients in health are similar for men and women, and, if not, whether they are consistently greater for one gender than the other, either in general or for specific indicators of health and illness.

Even less attention has been given to the potential reasons for any observed variations, despite the fact that biological differences and the entrenched structuring of most aspects of life on the basis of gender clearly create the potential for very different exposures and experiences, both materially and culturally, for men and women. Biological differences in vulnerability to environmental threats and differences between men and women in specific causes of death might plausibly lead to interactions between socio-economic factors and gender in the social patterning of health. Despite challenges and changes to gendered hierarchies over the last few decades, men and women still occupy very different places in the labour market and have different reproductive roles and expectations. Typically, men and women have differential access to material, social and psychological resources; are socialized into different coping responses; have access to different buffers against stress; and have differing culturally and socially shaped distributions of health-related behaviours. In sum, socio-economic indicators may have different meanings for men and women.

As Carroll and colleagues have remarked, conceptual models which take account of the clustering of adverse physical and psychosocial factors over the life course are 'critical' for understanding the links between socio-economic status and health, although 'identifying the salient physical and psychosocial factors is a formidable research mission' (1996, p. 23). We would argue that gender is a crucial additional axis which determines much of this 'clustering' over the life course and that there is much merit in attempting more systematically to take account of the explanatory models invoked for socio-economic inequalities in health when examining gender differences in health, and vice versa.

In this review, we first outline recent thinking about socio-economic inequalities in health (very briefly, since this is covered in other articles in this issue); second, we examine in somewhat more detail recent research on gender differences in health; third, we review what is known about differences in socio-economic gradients in mortality and morbidity between men and women; finally, we conclude by discussing the problems, opportunities, and questions involved in bringing together research on socio-economic status and gender.

Socio-economic inequalities in mortality and morbidity

Socio-economic inequalities in longevity and health appear to be ubiquitous, and have been

observed and discussed in Europe at least for a couple of centuries (Chadwick, 1842/1965; Frank, 1790/1941; Macintyre, 1997). A particularly extensive research literature has amassed over the last two decades in Europe (see, e.g., Carroll et al., 1996; Davey Smith et al., 1990, 1994; DHSS, 1980; Fox, 1989; Kunst & Mackenbach, 1994; Kunst, Geurts, & van den Berg 1995; Lundberg, 1992; Macintyre, 1997; Rahkonen, Lahelma, & Huuka, 1997; Rahkonen, Lahelma, Karisto, & Manderbacka, 1993; Stronks, van de Mheen, Looman & Mackenbach, 1996; Vagero & Lundberg, 1989), and over the last decade in the USA (Adler, et al., 1994; Bunker, Gomby, & Kehrer, 1989; Kaplan, Pamuk, Lynch, Cohen, & Balfour, 1996; Pappas, Queen, Hadden, & Fisher, 1993; Williams, 1990). This literature suggests that: socio-economic inequalities are observable in all industrialized countries studied, although their magnitude may vary between countries; socio-economic inequalities are persisting and even increasing in those countries for which there are time series data (e.g. UK, New Zealand, Finland and USA); and gradients in longevity or health by socio-economic position usually follow a linear or stepwise pattern rather than a threshold pattern (Macintyre, 1994, 1997).

Hypothesized explanations for observed socio-economic inequalities in health include: artifacts of measurement, health-related social mobility, biological (including genetic) factors, health-related behaviours, access to and use of health services, exposure to different environments (at home and at work) and psychosocial factors. Most recent evidence suggests that observed health inequalities cannot be fully accounted for by differences in individual risk behaviours, by health-related social mobility or selection, or by artifacts of measurement of health or socio-economic position. A British government committee recently argued that

> It is likely that cumulative differential lifetime exposure to health damaging or health promoting physical and social environments is the main explanation for observed variations in health and life expectancy, with health related social mobility, health damaging or health promoting behaviours, use of health services and genetic or biological factors also contributing. Their importance will vary according to the variation considered, the health indicator used and the setting. (DoH, 1995, p. 15).

Recent reviews stress the role of, and provide some evidence for, cumulative lifetime exposure to varying material and psychosocial environments (Davey Smith, Hart, Blane, Gillis, & Hawthorne, 1997; Macintyre, 1997), and there is increasing interest in the importance of relative deprivation and social capital in generating inequalities (see Wilkinson, 1996, 1997).

Gender differences in mortality and morbidity

Mortality

Sex differences in longevity and health are part of the taken-for-granted assumptive world of epidemiologists and health social scientists and are, therefore, not always treated as phenomena requiring explanation (Macintyre, 1993a). However, over the last 20 years there has been a growing literature on gender differences in health (see Arber, 1989; Bartley et al., 1992; Verbrugge, 1989 for reviews). The conventional wisdom is that in industrialized societies men die earlier than women, but that women have poorer health than men. It appears that from the Palaeolithic period to the Industrial Revolution men had a longer life span (at around 40 years) than did women (at around 35 years); excess female mortality was not specific to the reproductive years but seems to have been apparent from childhood. During industrialization women's life expectancy mostly remained shorter than did men's (Anderson, 1990) but during the latter part of the nineteenth century it first equalled, then outstripped, men's, so that women in most industrialized countries can now expect to live six years longer on average than can men. In 1996 in the UK a boy had a life expectancy at birth of 74.4 years, compared with 79.7 years for a girl (Central Statistical Office, 1996). Males have higher rates of fetal death, stillbirth and neonatal death (Hart, 1989; Lopez, 1983).

Men still live longer than women do in some countries, notably in less developed ones (e.g. India, Pakistan, Bangladesh, Nepal and Afghanistan) (WHO, 1989), in which infectious disease remains an important threat to health, many

potentially harmful environmental and occupational exposures are unregulated, and the penalties of reproduction are higher because of pressures towards early and repeated childbearing in the face of less adequate nutrition (Okojie, 1994; Vlassof, 1994). In rural Somalia in the late 1980s, for example, women had higher mortality than did men in the reproductive period, an inequity compounded by indicators of social inequality in the household. The life expectancy at 15 years was 58 for a literate male, but 42 for an illiterate female living with a literate head of household (Aden et al., 1997).

The excess mortality of males compared to females in the more developed world has increased substantially this century; for example, the gap between male and female life expectancy increased from 3.9 years in 1900/10 to 5.9 years in 1983/85 in Britain (McPherson & Coleman, 1988). Recent trends show fluctuations by age and place; an analysis of 23 developed countries between 1979 and 1987 showed that sex mortality ratios (male:female deaths) continued to increase for 25–34 year olds but showed mixed trends in other adult age groups; for instance, among 55–64 year olds, sex mortality ratios increased in southern and eastern European countries and Japan, but decreased in northern European and Anglophone countries (Waldron, 1993). In countries in eastern Europe previously in the communist bloc, male life expectancy started to decrease from the 1960s or 1970s, while female life expectancy remained static or continued to rise (Macintyre, 1993a); in the 1990s life expectancy fell in all 15 republics of the former Soviet union for both men and women, but the reduction was more marked for men than for women (WHO, 1997).

Thus, longevity differences between the sexes are not historically or cross-culturally constant, and there is some evidence to suggest that men's death rates may be more sensitive to socio-economic and environmental contexts than are women's. Although comparisons between male and female death rates are often controlled for age, they are rarely controlled for socio-economic status.

Women have lower death rates than men have at every age and for most causes. In 1994 in Britain, women had considerably lower death rates than men had for ischaemic heart disease, lung cancer, road vehicle accidents and suicide (ONS, 1996). In the USA in the 1980s, the age adjusted mortality rates for every one of the 12 leading causes of death were higher for men than for women; indeed, for homicide, respiratory cancer, suicide, chronic obstructive pulmonary disease, accidents, liver cirrhosis and heart disease they were twice as high for men than for women (Verbrugge & Wingard, 1987).

Explanations for gender differences in longevity have focused on gender differences both in exposure to adverse conditions, and in vulnerability to these conditions. For example, excess female mortality is often attributed to the inferior social and economic status of women which may lead to poorer nutrition and higher rates of infectious disease, and to the health damaging effects of repeated pregnancies. Johansson (1991) argues that women's disadvantaged social position can explain both their excess mortality in the nineteenth century and their lower mortality in the twentieth century, when this disadvantage protected them from non-infectious causes of death such as coronary heart disease and cancer. There are also hypotheses among biologists to the effect that women are physiologically less vulnerable to adverse conditions, as evidenced by lower female death rates even before birth, and less apparently responsive to social changes such as those in eastern and central Europe.

Morbidity

A number of reviews have reported that in adulthood women rate their health less positively; report more physical and psychosocial symptoms; consult health professionals more frequently; report more days of disability or sickness absence from work; have more hospital stays; take more prescription and over-the-counter medications; and have higher incidence of acute conditions (with the exception of injuries) and non-life-threatening conditions, than do men (Emslie, 1997; Miles, 1991; Verbrugge, 1985a, 1985b; Verbrugge & Ascione, 1987; Verbrugge & Wingard, 1987; Waldron, 1983). For chronic diseases, psychosocial disorders and health care utilization there is a reversal from a male excess to female excess between childhood and adolescence (Sweeting, 1994).

Verbrugge (1989) has reported that among a sample of white adults living in Detroit in 1978,

women demonstrated higher morbidity and health-care use than did men for 60 out of 67 different measures of health status and behaviour, with 42 of these differences achieving statistical significance. Data from the USA in the early 1980s showed sex differences in the incidence of acute conditions of around 20 percent to 30 percent, with women having excess morbidity for all major groups. Women restricted their activities for health reasons for approximately 25 percent more days, and spent an average of 40 percent more days sick in bed, than men did. The female excess in use of health services is greatest during the reproductive years; when reproductive and other specifically sex linked conditions are excluded, there is still an excess of about 30 percent for outpatient care, but women's and men's inpatient care rates became very similar (1985a). Men tend to show disadvantage in fewer, but potentially more life-threatening, conditions. They are more likely to have impairments (some the consequence of accidents) and long-term disabilities and have a higher prevalence of potentially lethal conditions such as coronary heart disease, atherosclerosis and emphysema (1985a). A female excess of long-standing illness and anxiety has been reported in Denmark, Norway and Sweden (Haavio-Manila, 1986), and a female excess of functional disability and heart disease morbidity has been observed among the Alameda County population in California (Wingard, Cohn, Kaplan, Cirillo, & Cohen, 1989).

Although it is often stated as a truism that women have higher rates of morbidity than men have, some evidence over the last decade suggests a more complex picture. Recent British data, for example, have not shown the expected gender differences in morbidity. In the British General Household Survey (GHS) there is little difference in reported prevalence of long-standing illness in adulthood up to the age of 74; only after 75 years is there a female excess of more than 1 percent, and this may be because all ages after 75 are grouped together and on average women in this age group may be older than men (Macintyre, Hunt, & Sweeting, 1996). Age standardized data from two other British population-based studies demonstrated a consistent female excess only for psychological distress, and not for physical symptoms and conditions (Macintyre et al., 1996). Haavio-Manila (1986) found no female excess in Finland for long-standing illness, anxiety or restricted activity due to illness.

A study in Canada found no significant gender differences in a wide range of measures, including self-reported past and present health status, days off work because of sickness and attitudes to health (Kandrack et al., 1991), and a study of husbands and wives in the Czech Republic showed no gender difference in self-reported health (Hraba, Lorenz, Lee, & Pechacova, 1996). The MacArthur study of successful ageing in the USA found no sex differences in the number of chronic conditions reported, or in diabetes and cardiovascular morbidity, among persons between 70 and 79 years (Seeman, 1995). In sum, it seems that a female excess in morbidity is most consistently found across the lifespan for psychological distress and is far less apparent, or reversed, for a number of physical symptoms and conditions (Macintyre et al., 1996). Verbrugge (1988, 1989) has pointed out that men have an excess of serious (potentially life-shortening) disability and disease, while women's excess morbidity tends to be in less serious conditions. This more complex and differentiated picture should alert us to the possibility that gender differences in health may not be constant but may vary within and between societies and over time in the same way as do mortality differences.

Explanations for gender differences in health include: biological risks; acquired risks relating to different behaviour or exposure; reporting differences; and different access to health care (Emslie, 1997; Verbrugge, 1985a). Physiological differences may play a role, but this is very unlikely to be consistent across different diseases or conditions. Earlier explanations rested heavily on health-reporting behaviour, with the obvious criticism that women may appear to be in poorer health because they are more ready to recognize, report and act on symptoms (Nathanson, 1977). However, more recent empirical evidence has cast doubt on this as a plausible general explanation (Macintyre, 1993b). While reporting differences might partially explain female excess in certain conditions (e.g. psychosocial distress), such 'artifactual' explanations are, as with socio-economic inequalities (Davey Smith et al., 1994), unlikely to account for all observed differences. Discussion of reasons for

women's apparent increased susceptibility to ill health has also centred on the gendered allocation of social roles, and in particular their family roles and participation (or not) in paid work (Arber, 1991; Arber, Gilbert, & Dale, 1985; Bartley et al., 1992; Elliot & Huppert, 1991; Hibbard & Pope, 1985; Hunt & Annandale, 1993; Kessler & McLeod, 1984). Research over the last decade or so lends support to the view that gender differences in health, where observed, are rooted in social roles, against the backdrop of some male biological disadvantage (Verbrugge, 1988). For example, Verbrugge (1989) argues that when a range of risk factors are taken into account (e.g. age, life-style, roles, stress, socio-economic status, health attitudes and reporting behaviour) there is a male excess in morbidity.

As we have argued elsewhere (Hunt & Annandale, 1993; Hunt & Emslie, in press), there are a number of asymmetries in the treatment of structural position and gender roles, many of which stem from the widespread tendency to polarize men and women, male and female and masculine and feminine (Annandale & Hunt, 1990). Research on the health correlates and consequences of paid employment, for example, has often been underpinned by different assumptions about the relevance of employment for men and women; a 'job model' for men and a 'gender model' for women (Emslie, 1997; Feldberg & Glenn, 1979; Hunt & Annandale, 1993). In these models work conditions are regarded as relevant only for men's health, and employment as an additional social role as relevant only for women's health. It is often assumed that socio-economic differences in ill health for men will be larger than that for women, because of men's greater attachment to the formal labour market (Lahelma & Arber, 1994). Few studies have examined the influence of work conditions on women's health, or of role conflict or role enhancement on men's health (see Hunt & Annandale, 1993; Lennon, 1987 for examples of exceptions).

Those few studies which have controlled for occupational position have found that women report higher rates of some types of minor morbidity than men do, but not higher rates of physical or chronic morbidity. For example, Emslie (1997) examined gender differences in a relatively homogenous sample, namely 2176 men and women working full-time in white-collar jobs within a single organization (a British bank). Significant gender differences, though small, were apparent for the number of common symptoms experienced in the last month, the number of malaise symptoms in the last month and self-assessed health, even after taking account of a wide range of socio-demographic, occupational and behavioural variables (including age, marital and parental status, occupational grade, perceived working conditions and attitudes, gender–role orientation and attitudes, smoking, drinking and self-esteem). However, no differences were seen for number of physical symptoms or mental health status (as measured by the 12-item General Health Questionnaire). Similar results were found for mental health in a parallel study of full-time employees of a British university, but in this study gender differences less often remained after taking account of other factors (Emslie et al., 1997).

Are socio-economic gradients steeper for men than for women?

Mortality

A number of studies have found the relationship between socio-economic status (SES) and mortality to be less strong for women than for men. For example, Pappas and colleagues (1993) showed that among white men in the USA in 1986, the age-adjusted mortality for those with the lowest educational attainment was more than 2.5 times higher than for those with the highest educational attainment, while the equivalent excess among white women was 1.86. Mortality differentials by income were also larger for men than for women, and the increase in SES differentials over time (1960–1986) was greater for men than for women. Backlund, Sorlie and Johnson (1996), using the National Longitudinal Mortality Study Survey in the USA, also recorded less steep gradients for women than for men in income-related mortality, and Kaplan and colleagues (1996) reported lower correlations for women than for men between all-cause mortality and the proportion of household income received by households below specified centiles in 50 of the United States.

In the UK, mortality rates around the 1981 census showed clear gradients by occupational

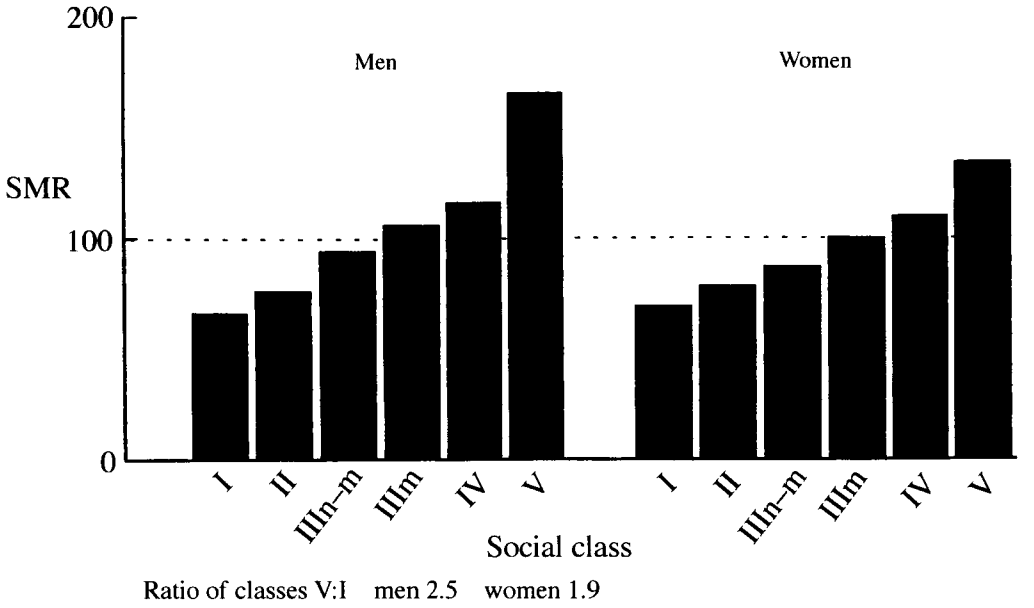

Figure 1. Standardized Mortality Ratios for men aged 20–64 and women aged 20–59 by occupational class around the 1981 census, Great Britain (OPCS, 1986).

class, which were steeper for men than for women (see Figure 1, OPCS, 1986). Years of potential life lost were similarly differentiated by occupational status, more for men than for women (per thousand population, men in social class V lost 114 years of potential life per 1000 population, compared with 39 in class I; comparable figures for women were 34 and 16) (Blane, Davey Smith, & Bartley, 1990).

Higher correlations have also been found in Britain between mortality and voting patterns (seen as a marker for socio-economic position) for men than for women; for example, the correlation between the proportion in constituencies voting Conservative in the 1992 election and the standardized mortality ratio was −0.79 for men and −0.61 for women (Davey Smith & Dorling, 1996). Another ecological study examining the association between social deprivation and mortality in the UK found weaker correlations for women than for men for all-cause mortality (0.65 compared to 0.81), and a slightly weaker correlation for women than for men for coronary heart disease mortality (0.67 compared to 0.71) (Morris, Blane, & White, 1996). A study in Scotland also found that the difference in mortality rates between people living in the most and the least deprived neighbourhoods was greater for men than for women, around the time of both the 1981 and 1991 censuses; mortality rates increased more among men (22%) than among women (11%) in the most deprived areas between these censuses (McLoone & Boddy, 1994).

A comparison of occupational mortality differences across several European countries revealed that mortality differentials were greater among men than among women in France, Hungary, Norway, Denmark and Finland in the 1980s (Koskinen & Martelin, 1994). The association between mortality and years of education was similar across countries among men, but varied among women, and in the Nordic countries women's relative mortality differentials were around 60 percent of men's (Valkonen, 1989).

Among the elderly in Finland, socio-economic mortality differentials (whether measured by education, income or housing conditions) were smaller among women than among men, particularly in the age group 60–74 (Martelin, 1994). Among Finnish people aged 30–64, mortality from coronary heart disease (CHD), other cardiovascular diseases, cancer, violence,

and all other causes was higher among unskilled blue-collar workers compared with white-collar workers for both men and women. Among men the relative risks, adjusting for age, smoking, serum cholesterol, hypertension, body mass index and leisure physical activity, were 1.47 for all-cause mortality and 1.22 for CHD. Equivalent adjusted relative risks for women were 1.39 for all-cause mortality, and 1.66 for CHD. This study was the first to examine the effect of adjusting for cardiovascular risk-factor profile in both men and women; these adjustments accounted for about half of the excess in mortality in blue-collar workers among men, but 'a clearly smaller proportion of the association between social class and mortality' for women (Pekkanen, Tuomilehto, Uutela, Vartiainen, & Nissinen, 1995). (Steeper gradients for myocardial infarction event rates and case fatality among women as compared with men have been reported from a study of areas varying in level of deprivation in Glasgow, Scotland [Morrison, Woodward, Leslie, & Tunstall-Pedoe, 1997].)

Table 1 summarizes differences between men's and women's socio-economic inequalities in mortality in Finland in two periods, the early 1970s and late 1980s. For each of three measures of inequalities (ratio of probability of dying, population attributable risk and index of dissimilarity) women showed lower inequalities than did men, and less difference between the two periods—during which inequalities increased markedly among men (Mackenbach & Kunst, 1997).

Koskinen and Martelin (1994) examined a number of potential mechanisms for the apparently smaller socio-economic mortality differences among women than among men:

- choice of indicator used in measuring socio-economic position
- the confounding influence of other socio-demographic variables and
- differences in the cause of death structure between men and women.

Using data from the 1980 Finnish census linked with subsequent death records for 35–64 year olds, they found that whether using level of education, occupational class, housing density or standard of equipment in the dwelling, the relative magnitude of inequalities was smaller among women than among men. However, this only applied to married persons. Among single, divorced or widowed women the socio-economic mortality gradient was as steep among women as among men. An examination of specific causes of death revealed that men have a steeper socio-economic gradient for accidents and violence than do women, and that women have slightly steeper gradients for circulatory diseases. For most major causes of death, however, the socio-economic gradients were fairly similar, and the weaker gradient for all-cause mortality for women was due mainly to a reverse gradient for breast cancer, which accounted for 9 percent of all female deaths (Koskinen & Martelin, 1994).

Breast and ovarian cancers are more prevalent among more socio-economically advantaged women although, for breast cancer, the mortality gradient is less steep than the incidence gradient, suggesting that more advantaged women may have better survival chances (DoH, 1995; Leon, 1988). Malignant melanomas also show a 'reverse' socio-economic gradient, which is steeper for males than for females (OPCS, 1986). By contrast other cancers have a steep socio-economic gradient in the typical direction (DoH, 1995). Thus, just as it has been observed that the causes of death contributing to socio-economic inequalities in male mortality differ between countries (mainly accidents in Denmark, Norway and Finland; cardiovascular, cancer and respiratory in England and Wales; and cancer, accidents and cirrhosis in France

Table 1. Summary measures of socio-economic inequalities among Finnish men and women aged 35–64, 1971–1975 and 1986–1990 (Mackenbach & Kunst, 1997)

	Men		*Women*	
	1971–1975	*1986*	*1971–1975*	*1986–1990*
Ratio of probability of dying	1.58	1.86	1.34	1.41
Population attributable risk (%)	30.0	38.0	19.5	20.4
Index of dissimilarity (%)	7.5	11.7	4.9	7.4

[Leclerc, Lert, & Fabien, 1990]), it is important to note that causes of death contributing to socio-economic gradients may differ between men and women.

Body size and shape

Among both men and women there is a socio-economic gradient in height, with those in poorer groups having shorter stature (Eveleth & Tanner, 1976; Macintyre, 1988). Evidence about gender differences in socio-economic height gradients is equivocal. A recent Scottish study found no significant sex differences in the association between height and occupational social class at any of three ages (Ford, Ecob, Hunt, Macintyre, & West, 1994), but data from Sweden suggested that the height gradient was slightly steeper and more consistent for men than for women (Nystrom Peck & Vagero, 1987) (see Table 2). There is a secular trend in increasing stature. This seems to have affected men more than women in some countries (e.g. Sweden, Ireland, Japan, Poland, Netherlands, UK) in certain periods (Kuh, Power, & Rodgers, 1991). In the UK men born in 1958 were on average 7.12 cm taller than men born at the beginning of the century, whereas the increase in mean height for women during the same period was 3.08 cm; the increases took place at different times for men and women. Social class differences appear to have been converging for men but diverging for women (Kuh et al., 1991).

Table 2. Age standardized mean height (cm) by socio-economic group according to father's occupation, among 16–74 year olds in 1980–1981, Sweden (based on Nystrom Peck & Vagero, 1987)

	Men	*Women*
Unskilled workers	176.9	164.3
Skilled workers	177.3	164.3
Junior salaried employees	178.1	164.9
Immediate salaried employees	178.4	165.3
Senior salaried employees	179.8	165.6
Self-employed (excl. farmers)	178.0	164.4
Farmers	177.1	164.5

The relationship between socio-economic status and body shape (whether measured by body mass index or weight hip ratio) differs between men and women. Women tend to have lower body mass index the higher their socio-economic position, while men show the reverse pattern. This is shown in Table 3 for three different population studies in the UK; in each of them, among women the lowest body mass index is found in more advantaged groups and the highest in the least advantaged groups while the opposite is true for men.

Morbidity

Arber (1997) examined rates of self-reported limiting long-standing illness and of self-assessed health as 'less than good' in men and women of working age in the UK, using

Table 3. Body mass index weight ((k)/height $(m)^2$) by occupational social class in the Paisley/Renfrew study (n = 15, 411 aged 45–64) and West of Scotland Twenty–07 study (n = 446, aged 55), and by employment grade in the civil service in London (n = 10, 300, aged 35–55)

		Occupational social class					
		I	*II*	*IIIn*	*IIIm*	*IV*	*V*
Paisley[a]	m	25.8	26.1	25.8	25.9	25.8	25.5
Renfrew	f	24.5	25.3	25.2	26.3	26.0	26.7
2007[b]	m	25.8	26.6	26.1	26.1	26.1	25.1
at 55	f	25.1	25.3	26.1	25.9	26.5	27.5
		1	*2*	*3*	*4*	*5*	*6*
Whitehall II[c]	m	24.6	24.4	24.6	24.5	24.8	25.1
	f	23.7	23.7	24.3	24.1	24.3	25.3

[a] Hawthorne et al., 1995
[b] Ford et al., 1994
[c] Marmot et al., 1991

occupational social class and educational qualifications as measures of socio-economic position. She found that

1. Occupational class gradients were steeper among men than among women for both limiting long-standing illness and self-assessed health.
2. Educational gradients were similar among men and women for long-standing illness, and were steeper among men than among women for self-assessed health.
3. Educational qualifications showed a sharper gradient than occupational class for women; for men there was little difference between the two measures.

Similar findings were reported for 18 year olds by West (1997); as Table 4 shows, there were significant gradients by occupational class for males but not females in several self-reported health measures. However, Power, Matthews and Manor (1996) found that gradients in self-rated health were quite similar for men and women at age 33 (especially when adjusted for health at age 23).

Kunst and colleagues (1995) examined a range of self-reported health measures by several SES indicators and by gender in a number of countries (six EC countries, the Nordic countries, Canada, the USA and Japan). For men, a similar pattern of international variation was found for each indicator, with the smallest health inequalities observed for Norway, Sweden, the UK and Spain, and the largest for Germany, Italy, Canada, and the USA. For women, however, there was little consistency between health indicators, except that inequalities were large in Italy, Spain, Canada and the USA. Thus, although socio-economic inequalities were found to be present in all countries studied, their magnitude varied by country, gender, and, among women, by health measure.

Lahelma and Arber (1994) undertook a comparative analysis of inequalities in health among men and women in four North European countries: Britain, Finland, Norway and Sweden. In the Nordic countries the social welfare system has encouraged more economic independence for women and a much higher degree of female participation in the labour force (in the period studied, among women aged 20–59, 86% in Sweden, 78% in Norway, 77% in Finland and 62% in Britain were employed; part-time employment is important for women in all of these countries except Finland). Lahelma and Arber invoked a broader framework which included not only socio-economic position (based on occupational class) and employment status but material conditions and family roles. As expected, they observed greater differentials in limiting long-standing illness among men than among women in Finland, Norway and Britain. However, in Sweden the differentials in illness were larger for women.

Lahelma and co-workers have examined the change in the strength of class gradients in limiting long-standing illness in Finland between 1986 and 1994 (i.e. a later period than that examined in relation to mortality by Mackenbach and Kunst, 1997, and a period which is characterized by a sharp increase in unemployment). Health inequalities in the later period

Table 4. Percentages of males and females reporting poor health at 18, by social class of background: West of Scotland Twenty–07 study (West, 1997)

		Occupational social class of background		
		I–IIIn	*IIIman*	*IV–V*
Severe limiting long-standing illness	m	1.6	1.3	8.5*
	f	3.0	2.3	3.9
Health rated as not good	m	2.1	7.2	10.0*
	f	5.2	5.9	9.1
Accident since 15	m	33.3	40.6	50.0*
	f	17.3	12.9	20.6

* statistically significant at $p < .05$.

were more similar for men and women than they were in the earlier period as a result of some lessening of inequalities in men (Lahelma, Rahkonen, & Huuka, 1997).

An analysis of men and women of working age who participated in the British Health and Lifestyle Survey examined minor physical morbidity and affective disorder by gender, two broad age groups, and by four measures of socio-economic position (occupational class, household income, marital status and work status (Popay, Bartley, & Owen, 1993)). There were significant interactions for affective disorder between sex and income in both age groups, and for sex and occupational class, and sex and work status, for older persons (40–59); for minor physical morbidity there was an interaction between sex and income in the older group. Otherwise, there were no significant interactions with sex, and the authors argue that

> Our exploration of the social causation exploration of the female excess of ill health therefore suggests that the excess cannot be fully explained by sex differences in the relationship between social position and either affective disorders or minor physical illness. It would appear that some part of the excess is due to women's concentration in social positions associated with particularly high rates of ill health—social positions which men rarely occupy. Additionally it seems that within social positions occupied by both women and men, almost without exception, women report higher rates of both affective disorders and minor physical morbidity. (p. 28)

In another study which attempted to control for employment and family roles, Kessler (1982), using data from eight surveys in the USA, examined the relationship between several SES indicators (income, education and occupation) and distress, among three subgroups: men in the labour force, women in the labour force, and homemakers. The relative importance of these indicators varied with sex and labour-force participation. Among men in the labour force, income was the most significant predictor of distress, while among women in the labour force and homemakers education was the most important. Occupation was the least important predictor of distress and had similar effects on the mental health of men and women. Further, more complex, analyses revealed several ways in which the social meanings, and their consequent effects on mental health, of these social positions differed between sexes.

First, among men personal earnings had some influence on distress while other sources of income did not, while among women the opposite pattern appeared. Second, among married men there was a marginally significant *positive* association between spouse's occupational status and distress, that is, men married to women in high-status jobs experienced more distress than men with wives in lower status jobs. In contrast, among married working women there was a *negative* association between spouse's occupational status and distress. For housewives, however, there was no effect of spouse's occupation on distress.

Two studies have reported on health by gender and occupational position among men and women who occupy more similar social positions than is usually the case in the general population. Both investigated men and women employed in white-collar occupations and in both the findings for socio-economic health gradients in men and women are somewhat mixed. In the Whitehall II Study of London based civil servants there were significant relationships for men, but not for women, between employment grade and the following conditions: mean number of symptoms reported, prevalence of long-standing illness, whether on drug therapy for hypertension, and blood pressure. However, significant trends were seen for both sexes for other health indicators (including possible or probable ischaemia on ECG, self-rated health, body mass index and obesity). For women, but not men, significant grade differences were observed for angina and the reporting of any health problem in the last year (Marmot et al., 1991). In a study of minor morbidity in a British bank, Emslie (1997) found that crude differences between clerical workers, supervisors and managers were apparent for women but not for men for less than good self-rated health, GHQ caseness and mean number of doctor visits. No grade differences were seen for either men or women for mean number of recently experienced common symptoms or malaise symptoms. When multivariate analyses controlled for age, sociodemographic variables, working conditions

and gender–role orientation and attitudes, occupational grade differences were seldom significant for women, with the exception of GHQ, for which female managers had poorer scores than for clerical workers.

It has been argued that women at the 'top' of very hierarchical, largely 'male', occupations may be subject to particular psychosocial stresses (see Hunt & Emslie, in press). In both of these workplace-based studies, men in the top grade usually fared better than men in the second top grade, whereas women in the top occupational grade registered poorer health than women in the second top grade in some measures. For example, in Whitehall II women in the top grade were more likely to have possible ischaemia on ECG or angina by questionnaire, to rate their health as average or worse, and to be obese; in the bank female managers had higher GHQ scores than did supervisors or clerical workers. The finding that women in the top occupational grade sometimes do 'worse' than those in the second highest has also been reported from studies of obstetric outcomes. For example, in the UK, perinatal mortality in 1992 was slightly higher for women married to men in social class 1 than for those married to men in social class 2 (OPCS, 1995). Similar findings have been reported from elsewhere (e.g. Hemminki, Malin, & Rahkonen, 1990; Lumley, Cowey, Newman, & Curran, 1985; Tzoumaka-Bakoula, Lekea-Karinaka, Matsomanin, & Golding, 1989), and in one Finnish study perinatal deaths and preterm births were lowest in women in the second highest educational group, a pattern which remained after controlling for age, parity, urbanization, marital status, smoking and time of first prenatal visit (Hemminki et al., 1990). This suggests that while women in senior employment positions may be more likely than equivalent men to have been selected on the basis of good health (Emslie, 1997), they may also experience more stress than men will in these positions.

Discussion

Although socio-economic gradients in health and longevity are ubiquitous in industrialized societies, their magnitude varies by gender as well as by historical period, SES measure and health indicator. In general, using conventional measures of SES such as occupation, education, income, neighbourhood deprivation and household access to assets, gradients in women's rates of death or health appear to be less steep and consistent than the gradients for men. Closer examination of cause-specific mortality or morbidity, and of body size and shape, reveals exceptions to the general pattern. For example, there is some evidence that CHD mortality or morbidity may exhibit a steeper gradient for women than for men, and whereas women display socio-economic gradients in body mass index in the expected direction, men generally do not.

Researchers in the inequalities field often assert that socio-economic gradients are fundamental and ubiquitous. For example, Kaplan and colleagues (1996) recently argued that

> the inverse association between socioeconomic level and risk of disease is one of the most pervasive and enduring observations in public health. This association is found for most diseases for most measures of socioeconomic level and is generally consistent across age, time, place, and organ system. (p. 999)

Equally, researchers in the gender field frequently testify to the universality of gender differences in health. Emphasizing the pervasiveness of socio-economic and gender differences may, in general, have diverted attention from two important questions likely to help in developing and refining models of the social patterning of health, namely whether gender differences in health are influenced by SES, and whether socio-economic gradients are influenced by gender.

We have sketched the beginnings of a research field concerned with the intersection of gender and SES. In concluding this review, we highlight both problems and opportunities in this field. One problem is that the work on the intersection of socio-economic position and gender does not seem to have influenced the mainstream fields of gender differences in health or socio-economic inequalities in health. Recent important work in the inequalities field is, for example, often gender blind and makes general statements about the shape of socio-economic gradients in mortality or morbidity, or about causal processes, without examining whether these apply differentially to men and women (see, e.g., Kennedy et al., 1996; Wilkinson, 1996, 1997). This is particularly surprising when

psychosocial mechanisms are being discussed, since research in psychology, sociology and anthropology suggests that women and men have different exposures to psychosocial threats or advantages; have different resources for dealing with threats; and may have different reference points for social comparisons.

Another problem is that the social meanings and relevance of various socio-economic indicators for health are often examined separately for men and women. There is an extensive literature on different measures of SES and their implications for analysis of inequalities in health (Berkman & Macintyre, in press; House et al., 1990; Liberatos, Link, & Kelsey, 1988) which we do not have space here to review. When the issue of the appropriateness of a particular measure is considered, however, this is often with reference to one sex only. For example, the British tradition of inequalities research has relied heavily on the Registrar General's classification of occupations (Stevenson, 1928), supplemented since the 1980s by asset-based measures such as housing tenure and car ownership (Davey Smith & Egger, 1992; Fox & Goldblatt, 1982) and by indices of local area deprivation (see Carstairs & Morris, 1991). The use of this Registrar General's system has survived despite extensive criticism, largely because it has allowed comparison of class differences in mortality over a substantial period and because of its 'operational simplicity' (Bartley, Carpenter, Dunnell, & Fitzpatrick, 1996). The two most serious criticisms of the Registrar General's classification in this context are that it was originally developed with explicit reference to health (specifically, fertility and subsequently mortality) and that it is heavily based on a now outdated male occupational structure. It allows little discrimination between 'female' occupations (Berkman & Macintyre, in press) and does not adequately reflect many of the kinds of jobs which men now do.

Anxieties about the inadequacies of occupational measures have led to the examination of a number of alternative classifications, although often separately for men and women. For example, there are studies exploring the relative predictive value for women of using their own or their spouses' occupation (Fox & Goldblatt, 1982), but no equivalent studies for men examining the effect of using their wives' occupation (the only studies which have done this have tended to be focusing on status incongruity rather than on refining the measurement of men's SES). Bartley and colleagues (1996) have recently compared class gradients in mortality among men aged 15–64 years in the Longitudinal Study using the Registrar General's classification and an alternative occupational-based measure, the Erikson-Goldthorpe classification. The latter was developed to enable international comparisons, and is designed to reflect security of employment, employment status (employer vs employee), career prospects and control of work, with no reference to health. Similar mortality differentials were found using both classifications. Although this analysis was applied only to men, analyses of other refinements in SES measures (e.g. adding marital status, economic activity and indicators of household wealth, such as housing tenure and access to a car, or a combination of these) have been applied only to women in the Longitudinal Study (Moser, Pugh, & Goldblatt, 1988; Pugh, Power, Goldblatt, & Arber, 1991).

The use of occupational-based measures inevitably raises problems, particularly when comparing class inequalities in men and women, given the entrenched gender segregation of work. Whether and in what circumstances someone is in paid employment is a key feature of their life. However, with the exception of a few Nordic countries (notably Finland), men and women's positions in the formal labour market remain very distinct, despite cultural and legislative changes over the last quarter century. Table 5, for example, demonstrates employment status among men and women in 1996 in Britain

Table 5. Population of working age by gender and employment status, UK, Spring 1996: Percentages (ONS, 1997, Table 4.2)

	Males (16–64)	*Females (16–59)*
Full-time employees	58.1	34.6
Part-time employees	4.3	26.4
Full-time self-employed	11.8	2.3
Part-time self-employed	1.1	2.3
Other employed	1.1	1.1
Unemployed (ILO definition)	8.1	4.6
Economically inactive	15.5	28.7
Total	100.0	100.0

Table 6. Employment sector by gender, UK 1996: Percentages (ONS, 1997, Table 4.8)

	Males	*Females*
Professional	12	10
Managers and administators	19	10
Associate professional and technical	8	10
Clerical and secretarial	8	26
Personal and protective services	8	16
Sales	6	12
Craft and related	17	3
Plant and machine operative	15	4
Other occupation	8	9
Total employees	100	100

and shows marked gender differences in distribution across employment categories (particularly for part-time work and self-employment) (see also Hunt & Emslie, in press, Table 1). Arber (1997) points out that in the UK there is a linear gradient between being in full-time work and occupational class, this being more pronounced for women than for men. Horizontal sex-segregation, where jobs are stereotyped as either 'male' or 'female', is a key characteristic of the labour market (Arber & Gilbert, 1992). When women are employed they are concentrated within a very limited number of occupations characterized by relatively low wages and status. This is illustrated in Table 6 which shows the distribution of employed men and women across different sectors in 1996 in the UK. This occupational disadvantage is further compounded by *vertical* sex segregation. Women in 'male' jobs generally remain in the least senior position, while men in 'female' jobs are overrepresented in more senior positions (Jacobs, 1993; Kauppinen-Torpainen & Lammi, 1993).

These different occupational opportunities and positions for women and men render problematic the application to both of occupational classification schemes. However, the strategy for dealing with this problem typically focuses on women, and tends to ignore the fact that not all men are in full-time employment, particularly in early and late adulthood. The emphasis on women when discussing problems of occupational class measures may, we suspect, relate to an underlying assumption that work and conditions of work are important for men's health but less so for women and, conversely, that household measures are more important for women because they are more closely linked to the domestic sphere. Few studies have attempted to treat work and home conditions symmetrically, although those that do have found that work conditions may be just as, or more, important for women's health than for men's (Emslie, 1997; Hunt & Annandale, 1993).

Gender stratification is so pervasive in society that it makes it extremely difficult to control for social circumstances when examining gender or class differences in health. For example, in studies of work settings, the recruitment paths, outside commitments and job conditions may differ between men and women occupying ostensibly the same occupational grade. In Emslie's (1997) study of a British bank, comparison between men and women managers had to take account of the fact that the women's experiences were very different from the men's; female managers were younger, had been with this employer for less time, were more likely to have a university degree, and were less likely to be married or to have had children, than men. As Emslie comments: 'thus, attempting to control for the gendered nature of the labour market reveals the gendered nature of the career paths and family lives of men and women working in each occupational grade in the bank' (p. 81).

A major issue requiring detailed empirical research is the social and psychological meanings and implications of different aspects of SES for men and women. What do employment, occupation, education, income, wealth, neighbourhood deprivation, housing tenure, access to a car, and the like actually mean for the everyday lives of men and women (at all levels of the social hierarchy), and how do these things impact on health, health-related behaviour and ability to cope with threats in the physical and social environment? With whom do men and women compare themselves when considering their place in social hierarchies or assessing their relative deprivation? A number of assumptions about these social meanings and their impact often underlie models of the social causation of health and illness, but are rarely examined systematically. Accordingly, we would argue that it is important that the intersection of gender and class in influencing health be taken into account systematically, and also that there are more comparisons of men and women using similar socio-economic indicators

rather than examining different sorts of indicators for each sex. We also argue that there is an important role for health psychology and medical sociology, as well as epidemiology, in examining the social and psychological meaning and impact of SES as well as material and psychosocial resources, for specific population groups such as men and women.

One often neglected issue is whether comparisons between men and women assume that differences relate to sex or gender. There is an important role for social psychological research in examining the importance of masculinity and femininity as categories cutting across biological sex. Annandale and Hunt (1990), using the Bem sex-role inventory, have reported that a high level of 'masculinity' in one's self-concept was associated with more favourable health in both men *and* women for mental health, self-assessed health and recent symptoms; similar findings have been reported in specific occupational settings (Emslie, 1997; Emslie et al., 1997) and testify to the importance of examining sex-role orientation.

This is a particularly pertinent time to attempt to bring together these two bodies of work on socio-economic inequalities and gender differences, and to try and address gender asymmetries in the inequalities literature. First, both fields have moved in the last 20 years from relatively simplistic explanations towards more subtle models which recognize that inequalities are likely to be the result of cumulative exposures to material, psychosocial and behavioural risks. As gender, as well as SES, continues to structure opportunities and life chances, it is important to examine the interaction between them. There is increasing interest in the interaction between biological and social processes in the field of socio-economic inequalities (Adler, Boyce, Chesney, Folkman, & Syme, 1993; Adler et al., 1994). The observation that males may be physiologically more vulnerable than females to adverse physical or social environments (Kuh et al., 1991; Thomson, Billewicz, & Holliday, 1967) might lead to the fruitful development of hypotheses about biological/social interactions, and the relative importance of exposure factors as compared to vulnerability factors. Hypotheses about differential 'weathering' (Geronimus, 1996) or 'miles on the clock' (Watt, 1993; Watt & Ecob, 1992), and the biological impact of differential ageing by gender and SES might be particularly relevant here.

Second, as the *fin de siècle* approaches, many social theorists have problematized the concepts of both class and gender. Some argue that both are of decreasing importance in shaping people's lives (see Featherstone, 1991; Giddens, 1991; Hood-Williams, 1996). In the early days of gender studies the focus was very much on women. Feminist research sought to render women 'visible' in order to redress the male bias in social and medical research in which the male or masculine was privileged and seen as the 'norm'. This inevitably led to an emphasis on the separateness and distinctiveness of the two genders and a polarization of the male and female, masculine and feminine (Annandale & Hunt, 1990), despite the research tradition within psychology which sought to challenge this polarization (see, e.g., Bem, 1974, 1981, 1993). These challenges to gender roles, together with changes in the structure of employment, particularly the loss of the prospect of secure, full-time employment for men, have had substantial consequences for men too. It is now *male* identities and masculinity that have been 'problematized', and there is now focus on defining masculinities (see, e.g., Morgan, 1990, 1992). There is also some evidence of convergence or crossover in life experience and behaviour, and it is important to examine empirically whether or not this will influence health patterns. As women and men's relations to the formal labour market and to the domestic sphere change, it is particularly timely to examine the meanings of work, class and gender for both sexes to elucidate both similarities and differences which may provide clues to the aetiology of various social inequalities in health.

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