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Psychological distress and work and home roles: a focus on socio-economic differences in distress

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ABSTRACT

Background. Home and work factors have been linked to psychological status, but less is known about their contribution to social inequalities in psychological status. We examine whether social inequalities in psychological distress can be explained by work–home factors and whether the impact of these potential explanatory factors is similar for men and women.

Methods. Data are from the 1958 British birth cohort study. We sought to explain social class differences in psychological distress at age 33. Explanatory factors were classified as work–home roles: i.e. employment, marital status, domestic responsibility, children and elderly care; and work–home characteristics: i.e. job-strain, insecurity, unsocial working hours, youngest child's age, number of children and level of involvement in childcare.

Results. A social gradient in psychological distress was found: odds ratios for classes IV and V *v.* I and II were 2·65 (men) and 3·02 (women). Work factors had consistently stronger associations with psychological distress and with social class among men than women. Work factors had a greater impact on class differences in psychological distress in men. Associations for home roles and characteristics were less consistent and their combined effect on class differences in distress was negligible for both sexes.

Conclusion. Explanations for the social gradient differ for men and women. Work may be more important for men than women, but the impact of home factors was not strong during the early adulthood of this cohort.

INTRODUCTION

Socio-economic inequalities in health are well documented in western countries (Fox, 1989; Davey-Smith *et al.* 1990; Macintyre, 1997). For most causes of morbidity and mortality, in men at least, health improves with each increment in the social hierarchy. Explanations suggested for the development of socio-economic inequalities tend to be discussed in broad categories, namely artefact of measurement, selection; lifestyle, material circumstances, biological factors including genetics, access and use of health services and psychosocial factors. Differences in the magnitude of health gradients between the sexes suggest that explanations could differ for men and women (Valkonen, 1989; Koskinen & Martelin, 1994). One possibility is that work and home factors have a different impact on health gradients for the sexes. The literature on home and work characteristics tends to consider these factors separately for men and women, often focusing on gender differences in health and not socio-economic health gradients. It is increasingly suspected that the combined effect of work and home characteristics affects adult health differently for men and women (Hibbard & Pope, 1987; Hall, 1992; Hunt & Annandale, 1993), and hence, we investigate the joint effect of these characteristics in the development of

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socio-economic inequalities in psychological distress.

A primary focus of research among men has been on work factors, particularly (un)employment, job insecurity and psychosocial characteristics of the job. Each of these factors has been related to mental health outcomes (LaRocco *et al.* 1980; Martikainen *et al.* 1999) and in one study, psychosocial work characteristics had a strong impact on the socio-economic gradient in depressive symptoms (Stansfeld *et al.* 1998). Psychosocial work characteristics have been conceptualized as job strain: i.e. a job with high demands and low control results in high strain, while high control and low demand is low-strain (Karasek, 1979). Women, though not often included in studies of job strain, have lower levels of decision latitude and control than men, but similar psychological demands at work (Karasek & Theorell, 1990). Determining the role of work demands on women is complex due to their varied work patterns and the additional demands of unpaid 'home' work.

Research on women's psychological health has focused on the effects of multiple roles, such as parenthood, marriage and employment (Elliot & Huppert, 1991; Weich *et al.* 1998). Multiple roles may have health benefits, as suggested by the role accumulation or enhancement hypothesis (Sieber, 1974; Aneshensel *et al.* 1981; Gore & Mangione, 1983; Thoits, 1983; Sogaard *et al.* 1994), or detrimental effects, as a result of role strain or overload. Some argue that women with responsibility for household tasks, childcare and work demands have high levels of stress (Ross & Mirowsky, 1992). Thus, any positive effect of paid employment for working mothers is mitigated by role overload. Others show that stress is greatest among working mothers when demands are high at both work and home (Williams *et al.* 1991), although other factors may be relevant, such as the type of job and level of social support (Hibbard & Pope, 1987; Hall, 1992).

The impact of multiple roles on the socio-economic gradient in psychological health has been largely ignored. In general, socio-economic position is treated as an adjustment variable (Martikainen, 1995; Weich *et al.* 1998), with few exceptions (Howe, 1973; Warr & Parry, 1982; Waldron & Jacobs, 1988). Thus, our main objective is to assess whether the socio-economic gradient in mental health can be explained by multiple roles at work and at home and associated work–home characteristics. Previously, we have demonstrated that there is a socio-economic gradient in psychological distress in early adulthood (Power & Matthews, 1997) and we expect that work–home factors might be important explanatory factors for this gradient. Furthermore, we anticipate that the importance of these factors in respect of the social gradient will vary for men and women. Specifically, we use data from a large British sample of adults (the 1958 birth cohort) to determine whether: (1) work–home roles and characteristics are associated with psychological distress in adulthood; (2) work–home factors are associated with socio-economic status; and whether (3) work–home factors contribute to the socio-economic gradient in psychological distress. At each stage we examine whether relationships are similar for men and women.

METHOD

Sample

The 1958 cohort includes all births in one week in 1958 (3–9 March) in England, Scotland and Wales (Ferri, 1993). In brief, information was collected on 98% of births totalling 17414, with follow-up of survivors at ages 7, 11, 16, 23 and in 1991 at 33 years, when 11405 subjects (69%) of the target) were re-interviewed. Sample attrition has resulted in a slight under representation of the most disadvantaged social groups. For instance, 21·2% of men and 21·4% of women had been born into social classes IV and V in 1958, compared with 18·6% (men) and 19·1% (women) who are included in our multivariate analysis of work and home factors. All information used in the present paper was collected at age 33, except for psychological distress assessed at both 23 and 33 years.

Measures

Details of measures and frequency distributions, are provided in Table 1. Psychological distress at ages 23 and 33 was assessed with the Malaise Inventory. The inventory is a self-completion 24-item checklist of symptoms of depression, anxiety and psychosomatic illness, with accept-

Table 1. *Details of measures and frequencies as percentages*

Description of measures	Categories	Men $N = 5200$ %	Women $N = 5500$ %
Psychological distress			
Age 23	$\geqslant 7$ or more	6·1	15·8
Age 33		6·9	12·3
Social class, age 33			
Professional/managerial	I & II	34·6	28·9
Other skilled non-manual	IIInm	11·5	38·8
Skilled manual	IIIm	34·9	8·1
Semi and unskilled manual	IV & V	19·0	24·2
Current employment status, age 33 (reference category = non-employed)	Employed (all)	(90·5)	(68·0)
	Full time $\geqslant 30$ h	89·4	36·1
	Part time < 30 h	1·1	31·9
	Homeworkers	3·6	27·4
	Others		4·5
	Unemployed	6·0	
Psychosoical work characteristics*			
1 'My work requires me to keep learning new things'	Lacks learning	12·8	25·5
2 'My work is monotonous because I always do the same things'	Monotony	15·3	29·5
3 'I can only take breaks at certain times'	Breaks	37·6	39·7
4 'I am able to vary the pace at which I work'	No control	16·6	19·7
'Job strain' – negative attributes from items $1 \rightarrow 4$ (see above)	$\geqslant 2$ = high strain	20·8	33·4
Job insecurity† 'My present work skills will be useful or valuable in five years time'	Skills not useful	8·2	16·0
Redundancies between ages 23 and 33	$\geqslant 1$	20·7	10·7
Unsocial work hours: i.e. 10 p.m.–7 a.m. and weekends [any hours], current/most recent job	Night and weekends	19·5	9·8
Marital status, age 33	Living as married	69·1	72·1
Domestic responsibilities (for cooking, shopping, cleaning, laundry, household repairs, DIY/decorating, and dealing with household finances. Responses grouped: 'does most' *v.* other. No partner classed as 'doing most'. Variables summed to give a score from 0 (no tasks performed solely) to 6 (all performed solely).	0 Low	14·5	2·0
	1 domestic	39·3	4·8
	2 tasks	21·5	11·5
	3 High	3·8	17·6
	4 domestic	0·7	25·4
	5 tasks	0·2	18·9
	6	20·0	19·8
Parental status	$\geqslant 1$	62·9	76·7
Carer of elderly adult (adult > 70 years) in the household used as a proxy for carer	$\geqslant 1$	2·8	1·6
Age of youngest child in the household	0–6 years‡	51·3	54·8
	> 6 years‡	11·6	22·0
	No children	37·1	23·3
Total number of children	$\geqslant 3$ children	6·6	4·8
Responsibility for child care ('who is generally with and looking after the children. I do most *v.* other. Single parents classed as 'doing most').	'I do most'	5·8	46·5
Home–work roles scale (number of roles i.e. employment, spouse, domestic, children and carer of elderly adult)	None Low	0·7	1·4
	1 roles	21·3	14·5
	2	22·2	18·6
	3–5† High roles	52·7	65·5
Partners employment status	No partner‡	30·1	27·4
	Employed‡	43·1	67·3
	Not working	26·8	5·3
Social support (emotional and practical support)§	Low support	24·3	12·0

* Dichotomized variable from responses on a 5-point scale ranging from very true to not at all true.
† Responses on a 5-point scale ranging from very true to not at all true, dichotomized to indicate insecurity.
‡ Categories combined for multivariate analysis.
§ Matthews *et al.* 1999.

able internal consistency (Cronbach's alpha = 0·77 at age 23 and 0·80 at age 33) (Rodgers *et al.* 1999). As in previous work we use a score of $\geqslant 7$ to indicate distress (Hope *et al.* 1999). Social class is based on the 1990 Registrar General's classification of occupations: 91% of men and 72% of women were classified according to their current job, the remainder according to their most recent job. Women were classified by their own occupation. Only 3% of men and 6% of women could not be classified, mainly because they had never been employed.

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Work factors

Current employment status was derived from the respondent's main economic activity: employed, home-workers, unemployed and others (full-time education and the sick) (Table 1). Psychosocial work characteristics were identified for those in and out of the paid labour force, using four statements about work (Table 1). Negative characteristics were summed (range 0–4) with a score of $\geqslant 2$ defined as high job strain (Matthews *et al*. 1998). Job insecurity was indicated by the respondent's perceived usefulness of their work skills. Redundancies were reported as job losses between ages 23 and 33. Unsocial working hours were based on whether the current or most recent job involved working nights (between 10 p.m. and 7 a.m.) and weekends.

Home factors

Home roles include: marital status, domestic responsibilities, parental status and carer of elderly adults. Home characteristics focus on the burden of parental responsibility, i.e. number of children, and responsibility for childcare (see Table 1 for definitions).

Additional variables include partner's employment status and social support (Table 1). The number of work–home roles was summed to provide a measure of multiple roles.

Data analysis

The contribution of work–home roles and characteristics to social differences in psychological distress reflects their simultaneous association with: (*i*) psychological distress; and (*ii*) social class. Associations were estimated using logistic regression, separately for each work–home factor. Odds ratios (95% confidence intervals) were obtained for men and women, but gender differences were tested in analyses of both sexes, including an interaction term. To address the final aim, we performed a series of logistic regression analyses to determine the impact of work and home factors on class differences in psychological distress. As a summary measure of class differences we report results for social classes IV and V relative to classes I and II (Manor *et al*. 1997). Given that class differences in psychological distress are likely to be influenced not just by adult life factors, we first estimated the odds ratios for class differences after adjustment for prior psychological distress (at age 23) as a proxy outcome for earlier life experience. Next, we made adjustments for work–home roles and finally for work–home characteristics.

RESULTS

At age 33 significant social class gradients in psychological distress are evident for both sexes, with a gradual increase in distress with decreasing social class (Fig. 1). The social gradient is evident for men and women in paid employment (Fig. 2). For women this is irrespective of hours worked, as shown by a non-significant interaction term between social class and part/full time employment ($P > 0{\cdot}05$). Rates of distress in those not employed are generally higher across all social groups, although for men the social class trends among 'others' is less consistent. Nevertheless, there were no significant differences between the unemployed and 'other', assessed by an interaction with social class ($P > 0{\cdot}05$). Hereafter, employment roles are categorized as currently employed and not employed.

Psychological distress and work–home roles and characteristics

Table 2 shows the odds ratios (OR) of psychological distress for each work–home role and characteristic. Employed men had a reduced

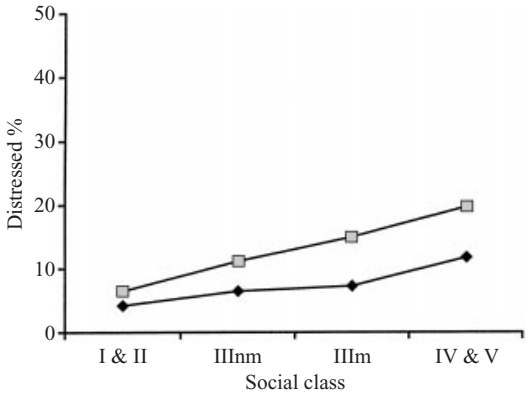

FIG. 1. Psychological distress by social class at age 33 (◆, men; ▨, women). See Table 1 for percentages of each social class. χ^2 (Mantel–Haenzel): 55·05 df(1) $P < 0{\cdot}001$ (men); 131·34 df(1) $P < 0{\cdot}001$ (women).

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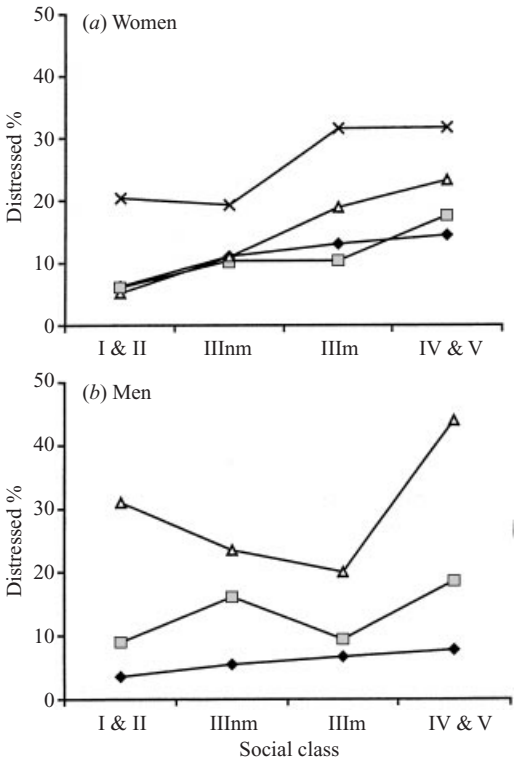

FIG. 2. Psychological distress by employment status and social class: (*a*) Women (◆, employed full-time $N = 2027$; ▨, employed part-time $N = 1834$; △, homecare $N = 1508$; X, other $N = 249$); (*b*) Men (◆, employed $N = 4970$; ▨, unemployed $N = 324$; △, other $N = 177$).

risk (OR = 0·23) of psychological distress relative to non-employed men, whereas, the reduced risk for employed women (OR = 0·61) was significantly less. For home roles, the lower risk of psychological distress associated with marriage was similar for men and women, but the risk associated with parental status differed by gender: men with children were less likely than men without children to report distress (OR = 0·78); conversely, women with children were more likely to report distress (OR = 1·39). Gender differences were also evident for domestic responsibilities, with elevated risks of distress among men with responsibilities for domestic tasks unassisted (OR = 2·04), but no association was apparent for women. Having an elderly adult in the household was not significantly associated with psychological distress.

With regard to work characteristics, 'job strain' and individual components of the summary 'strain' measure were all significantly associated with psychological distress among men, whilst associations were generally weaker for women (Table 2). Monotony in work showed the strongest association for both sexes. Significant gender differences were evident only for lacking 'learning' opportunities. Job insecurity was associated with psychological distress, with men (OR = 2·96) having a higher risk than women (OR = 2·05), while job redundancy increased the risk of psychological distress only in men. Unsocial work hours similarly increased the risk among men.

For home characteristics, the risk of psychological distress associated with three or more children did not differ significantly by gender (OR = 1·75 for men, 2·16 for women). Correspondingly, men and women with the greatest burden of childcare responsibilities had increased risk of psychological distress, but this risk was significantly greater for men. While, for age of youngest child, there was a lower risk of distress among men with a young child, that was not apparent among women.

In addition, we found an increased risk of psychological distress among women whose partner's were not employed, but no association was evident for men. Both men and women with low support were more likely to report psychological distress than those with high support.

To summarize, the work role and all work characteristics showed stronger relationships for men than for women, even though the differences were not always significant. This suggests that work roles and characteristics are likely to have a greater impact on social inequalities in psychological distress for men. For home roles and characteristics the associations with psychological distress were less consistent for men and women. Although no general pattern was apparent, factors relating to children tended to show stronger associations for women, while high burden of domestic responsibilities were stronger for men. These bivariate relationships do not support a role burden hypothesis because some roles were associated with decreased risk of psychological distress (employment, marriage and for men having children), while others appear to increase the risk (domestic responsibility for men, children for women). Indeed, when we sum work and home roles, we find that psychological distress decreases with increasing

Table 2. *Associations (odds ratios) between psychological distress at age 33 and the work and home environment*

	Men			Women			Gender difference
	N	OR	95% CI	*N*	OR	95% CI	
Work role							
Employment status	5561	0·23	(0·18, 0·29)	5754	0·61	(0·52, 0·71)	***
Home roles							
Married	5345	0·52	(0·42, 0·65)	5604	0·54	(0·50, 0·64)	
Domestic responsibility	5234	2·04	(1·63, 2·56)	5518	1·09	(0·88, 1·35)	***
Children in the household	5460	0·78	(0·63, 0·96)	5671	1·39	(1·14, 1·71)	***
Care of elderly	5496	1·67	(0·98, 2·83)	5714	1·18	(0·65, 2·13)	
Work characteristics							
Psychosocial strain	5122	2·33	(3·43, 5·61)	5422	1·79	(1·40, 1·93)	
Learning	5138	2·29	(1·73, 3·01)	5455	1·45	(1·21, 1·74)	**
Monotony	5133	2·66	(2·07, 3·44)	5466	2·57	(2·18, 3·04)	
Pace	5128	1·46	(1·10, 1·93)	5453	1·08	(0·88, 1·32)	
Breaks	5133	1·30	(1·03, 1·64)	5450	1·07	(0·91, 1·27)	
Job insecurity	5132	2·96	(2·19, 4·01)	5445	2·05	(1·69, 2·49)	*
Ever redundant	5494	1·32	(1·03, 1·68)	5428	0·97	(0·74, 1·27)	
Unsocial hours	5468	1·44	(1·13, 1·84)	5725	1·09	(0·84, 1·43)	
Home characteristics							
Youngest child in the HH							
No child	5460	1·00		5671	1·00		**
0–6 years of age		0·68	(0·54, 0·85)		1·14	(0·92, 1·41)	
⩾ 6 years of age		1·24	(0·84, 1·83)		2·09	(1·65, 2·63)	
Total number of children	5021	1·75	(1·03, 2·98)	5404	2·16	(1·59, 2·92)	
Child care	5306	1·99	(1·32, 2·63)	5557	1·45	(1·21, 1·74)	*
Miscellaneous							
Partner's employment status	5484	1·04	(0·82, 1·32)	5694	2·04	(1·53, 2·73)	***
Low social support	4998	1·33	(1·03, 1·72)	5375	1·70	(1·36, 2·13)	

* $P < 0{\cdot}05$; ** $P < 0{\cdot}01$; *** $P < 0{\cdot}001$.

number of roles (Fig. 3) (OR = 0·67, 95% CI 0·60–0·74 for men, OR = 0·81, 95% CI 0·75–0·87 for women). In further analysis (results not included) we found that this association was little affected by an adjustment for work–home characteristics (i.e. quality measures).

Social pattern of work–home roles and characteristics

Next we examined whether work and home factors differed by social class at age 33, as summarized with an odds ratio, expressing odds of each factor in classes IV and V relative to I and II. Table 3 shows that employment is strongly associated with social class, with a stronger gradient for men than women. Lower social class men and women were 81% and 61% less likely to be employed relative to those in classes I and II. For men but not women, marriage was less common in classes IV and V (OR = 0·63), whereas social differences in parental status emerged only for women (OR = 5·08). Those in classes IV and V did more domestic activities unassisted compared to those in I and II. Women in classes IV and V were less likely (OR = 0·50) and men more likely (OR = 2·53) to have an elderly adult resident with them, relative to those in I and II.

For work characteristics, we see that lacking learning opportunities and monotonous work were strongly associated with social class at age 33, with significant gender differences for learning and breaks and the combined measure of job strain (Table 3). Job insecurity was strongly associated with social class, with an OR greater than 7·00 for both sexes, and classes IV and V had a greater risk of redundancy. Trends for working unsocial hours differed by gender, women in lower classes were less likely and men more likely to work unsocial hours relative to those in classes I and II. For home characteristics, significant associations were evident between social class and age of the youngest child in the household and total number of children: men and women in classes IV and V had an OR in excess of three for having older

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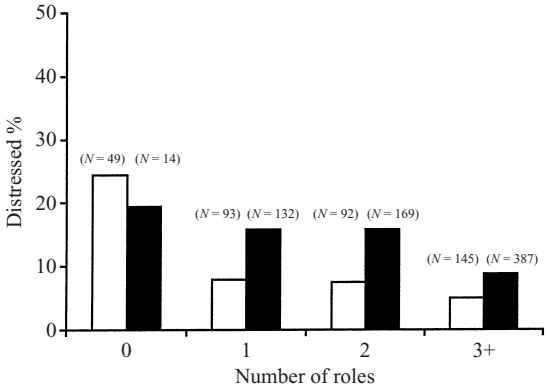

FIG. 3. Psychological distress and number of work–home roles. (□, men; ■, women). The trend in percentage distress by number of roles was significant for men (OR = 0·67, 95% CI 0·60–0·74) and women (OR = 0·81, 95% CI 0·75–0·87).

children and an OR of 1·96 for men and 4·36 for women of having more than three children. Lower classes were also more likely to do most of the general childcare. Significant associations were found between class and social support, with lower classes having less support, and between class and partner's employment status (OR = 0·78 for men; 3·48 for women).

To summarize, all work factors showed a stronger relationship with social class for men than for women, with most achieving statistical significance. This strengthens the case for work factors having a greater impact on socio-economic inequalities in psychological distress among men. Associations between social class and home factors are less consistent. On the combined scale of work–home roles, men in classes IV and V were less likely than those in classes I and II to have a high number of roles (OR = 0·69, 95% CI 0·59–0·81), while women in classes IV and V had an increased risk (OR = 1·40, 95% CI 1·21–1·62).

Social inequalities in psychological distress and work–home roles and characteristics

Table 4 presents the social class difference in psychological distress as an unadjusted OR of 2·81 for men and 3·02 for women. We next adjusted for psychological state at age 23. This adjustment provides a crude method for taking account of earlier life experience, since class differences in psychological distress are not merely a function of current circumstances. After adjustment for distress at age 23, the OR

Table 3. *Association (odds ratios) between work–home characteristics and social class at age* 33 *(classes IV and V v. I and II)*

	Men			Women			Gender differences
	N	OR	95% CI	*N*	OR	95% CI	
Work role							
Employment status	5471	0·19	(0·15, 0·24)	5663	0·39	(0·33, 0·46)	***
Home roles							
Married	5259	0·63	(0·53, 0·74)	5523	1·18	(1·01, 1·38)	***
Domestic responsibility	5146	1·49	(1·25, 1·78)	5440	1·49	(1·24, 1·79)	
Children in the household	5378	1·02	(0·87, 1·19)	5580	5·08	(4·17, 6·19)	***
Care of the elderly	5414	2·53	(1·62, 3·96)	5624	0·50	(0·26, 0·96)	***
Work characteristics							
Psychosocial strain	5042	4·29	(3·52, 5·23)	5354	2·76	(2·36, 3·24)	**
Learning	5059	8·00	(6·17, 10·37)	5386	6·48	(5·34, 7·85)	**
Monotony	5053	5·04	(4·02, 6·32)	5397	4·56	(3·84, 5·43)	
Pace	5049	1·20	(0·97, 1·48)	5385	0·97	(0·81, 1·16)	
Breaks	5053	2·58	(2·18, 3·06)	5381	0·88	(0·76, 1·02)	***
Job insecurity	5052	7·17	(5·31, 9·67)	5377	7·12	(5·61, 9·03)	
Ever redundant	5426	2·26	(1·88, 2·72)	5413	1·62	(1·27, 2·06)	***
Unsocial hours	5378	1·97	(1·62, 2·40)	5635	0·76	(0·61, 0·94)	***
Home characteristics							
Youngest child in the HH	5378	3·19	(2·48, 4·10)	5580	3·91	(3·24, 4·71)	
Total number of children	4946	1·96	(1·20, 3·21)	5311	4·36	(2·90, 6·54)	
Child care	5228	1·78	(1·28, 2·47)	5477	2·17	(1·87, 2·52)	
Miscellaneous							
Partner's employment status	5394	0·78	(0·65, 0·93)	5605	3·48	(2·46, 4·91)	***
Low social support	4917	1·86	(1·35, 2·03)	5308	2·10	(1·86, 3·23)	

* $P < 0{\cdot}05$; ** $P < 0{\cdot}01$; *** $P < 0{\cdot}001$.

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Table 4. *Odds ratios (social classes IV and V relative to classes I and II) of psychological distress, adjusted for work–home factors**

	Men $N = 3190$		Women $N = 3513$		
	OR	95% CI	OR	95% CI	Gender difference
Unadjusted	2·81	(1·69, 4·67)	3·02	(2·19, 4·17)	NS
Adjusted for:					
Psychological distress age 23	2·28	(1·34, 3·87)	2·36	(1·67, 3·32)	NS
Employment status	2·03	(1·18, 3·49)	2·36	(1·67, 3·33)	NS
Work characteristic					
(psychosocial strain)	1·72	(0·98, 3·02)	2·17	(1·53, 3·07)	NS
(insecurity)	1·58	(0·89, 2·81)	2·07	(1·45, 2·96)	NS
(number of redundancies)	1·61	(0·90, 2·85)	2·05	(1·44, 2·93)	NS
(unsocial work hours)	1·55	(0·87, 2·76)	2·07	(1·45, 2·95)	NS
Married	1·55	(0·87, 2·76)	2·09	(1·46, 2·98)	NS
Children in the household	1·54	(0·87, 2·74)	2·09	(1·45, 3·02)	NS
Domestic responsibility	1·58	(0·89, 2·82)	2·10	(1·46, 3·02)	NS
Elderly care	1·58	(0·89, 2·81)	2·13	(1·48, 3·07)	NS
Home characteristics					
(child-care responsibility)	1·59	(0·89, 2·83)	2·15	(1·49, 3·10)	NS
(age of youngest child in HH)	1·52	(0·85, 2·72)	2·00	(1·38, 2·90)	NS
(> 3 children)	1·52	(0·85, 2·71)	2·01	(1·39, 2·92)	NS
Low social support	1·51	(0·85, 2·70)	1·99	(1·37, 2·89)	NS
Partner's employment status	1·52	(0·85, 2·71)	1·99	(1·37, 2·90)	NS

* Including psychological distress at age 23.

was greater than two for both sexes, suggesting that early life factors do not (entirely) account for social inequalities in distress.

We next made adjustments for work–home factors (roles followed by characteristics). As anticipated, this analysis showed work factors to have a greater impact on class differences in distress among men than among women. Adjustment for employment status had only a moderate effect on the OR for men, but the addition of work characteristics, especially psychosocial job strain and insecurity, reduced the OR in psychological distress. Adjustment for work characteristics also had a moderate impact on the OR for women. Thereafter, further adjustment for home roles did not greatly affect the OR except among women, adjustment for age of the youngest child was associated with a modest reduction in the OR. It should be noted that these findings were unaffected by the ordering of work and home factors in the analysis.

DISCUSSION

Our study has shown that social class gradients in psychological distress exist for men and women at age 33, and as demonstrated elsewhere, women had a higher prevalence of psychological distress than men. Other studies have attempted to explain gender differences in mental health in terms of differences in multiple role occupancy. We examined whether this concept is relevant to the development of socio-economic gradients in psychological distress among men and women, but found little support for this.

Methodological considerations

Social class based on occupation is a widely used measure of socio-economic position, but has several limitations, particularly in the classification of women and those without an occupation through long-term unemployment or sickness. However, individuals excluded from our study because they had never been employed were a minority (3% of men and 6% of women), probably because of the relatively young age of the cohort. Thus, not all problems usually associated with occupational class were major concerns here. With regard to measurement of adult psychological status, the Malaise Inventory has been found to be a robust measure of distress with construct validity in early adulthood (Rodgers *et al.* 1999), but nevertheless, does not distinguish either between different types of affective disorder or between affective and personality disorders. Our findings are,

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therefore, for a general measure of psychological distress tapping common mental disorder largely comprised of depression and anxiety. It should also be noted that though biases do not appear to be large, our results may have been affected by sample attrition. However, set against this, the prospective data allow us to take account of previous relevant experiences. Childhood adversities, such as parental separation, being raised in an institution and childhood abuse are known to affect adult psychological status (Maughan & McCarthy, 1997; Bifulco *et al.* 1998). Moreover, psychological status at one life stage may influence subsequent social position through selective social mobility (Dohrenwend *et al.* 1992; Rodgers & Mann, 1993). In our study we did not examine childhood adversity or social mobility directly, but we took account of psychological distress at age 23, as representing the culmination of earlier life factors. This approach simplified the analysis, but may have under estimated the impact of early life influences when compared with more detailed studies of such influences (Power *et al.* 2000). It also needs to be acknowledged that all data used here are based on self-reported responses.

Finally, with respect to multiple roles, there is, as yet no adequate method of assessment. We adopted a method used elsewhere (Weich *et al.* 1998), which involved summing the total number of roles, although this assumes that roles are of equal weight and independent of each other.

Work factors

Social class gradients in psychological distress appear to be due in part to work factors, at least among men. This reflects associations between social class and work factors, and between work factors and psychological distress. Distress was less common among employed men than those not employed and in classes I and II compared with classes IV and V. In addition, men with higher levels of job strain were at greater risk of psychological distress and job strain was more prevalent in lower class occupations. These trends tended to be consistent for both sexes, although stronger for men than for women. Our findings are therefore in general agreement with other studies showing that characteristics of work, especially high levels of psychological demands predict psychiatric disorder in both men and women (Loscocco & Spitze, 1990; Stansfeld *et al.* 1999). Whereas low levels of decision authority and skill discretion have weaker associations with risk of psychiatric disorder. Studies also show that the amount of decision authority (control) and skill discretion in jobs is strongly socially patterned with higher levels in jobs of higher socio-economic status (Marmot *et al.* 1991; Stansfeld *et al.* 1998). Furthermore, our finding that socio-economic differences among men were no longer significant after adjustment for work factors, is in keeping with results from the Whitehall study of British Civil Servants where skill discretion and decision authority were important factors explaining the gradient (employment grade) in depressive symptoms in men and well-being in men and women (Stansfeld *et al.* 1998).

For women in the 1958 cohort, it is notable that employment status had no impact on social differences in psychological distress, whereas work characteristics, such as psychosocial strain and job insecurity did contribute to the socio-economic gradient. Why then are these factors doing very little especially for women? It may be that the greater importance of work as an explanatory factor for social differences in psychological distress in men relates to the greater salience of work for men's self-definition and self-esteem in general, compared to women. It may also be that the elements of work assessed, such as control over work, are more relevant to men's relation to work and mental health than women's (Ostergren *et al.* 1995). Historically women have not expected to exert control over others at work as much as men, in a similar way that manual workers expect to exert less control over others than managers (Kohn *et al.* 1990). Thus, it may be that women value control at work, as opposed to control at home, less than men and some of this attitude may persist.

It may also be relevant that job strain was originally conceptualized as a risk factor for employed men and, consequently, it may be less appropriate for women's work experience. Previously we showed a social gradient in psychosocial job strain for full and part-time employed women, yet no gradient among the 27% of women who looked after the home (Matthews *et al.* 1998). If psychosocial job strain were an important influence on social class differences in psychological distress we would expect no social

gradient for women who looked after the home, but this is not the case (Fig. 2). Thus, alternative concepts may be needed to fully capture women's work experience.

Home factors

Possibly the most surprising finding from our study was the negligible impact of home factors on the social gradient in psychological distress, particularly among women. Many home factors were not strongly associated simultaneously with psychological distress and social class. There are several possible explanations for this result. First, it may relate to the life stage examined, although counter to this, one would expect any effects of multiple roles to be most evident at this age, when the majority are married (cohabiting), have children and in employment. Multiple roles may nevertheless influence psychological distress among particular subgroups, for example those with scarce resources such as lone parents or those on low incomes. Secondly, there may be some prior selection of psychologically healthy individuals into multiple roles, and/or psychologically distressed individuals only take on certain roles. Thus, the picture of healthy individuals with multiple roles might be partly due to selection as well as any beneficial effect of multiple roles. The differences in number and age of children across classes may obscure differences in burdens so that like is not always being compared with like across class. In addition, our study does not address quality of roles in detail. The emphasis on number of roles, rather than their nature and quality has been a major criticism of research on multiple roles and refinements of measures may be justified (Baruch & Barnett, 1987; Menaghan, 1989; Hong & Mailick Seltzer, 1995). Finally, the multiple roles literature emphasizes current role status and thereby fails to take account of past roles and relevant influences, such as divorce.

Evidence exists for both a benefit of role accumulation (Aneshensel *et al.* 1981; Gore & Mangione, 1983; Thoits, 1983; Sogaard *et al.* 1994) and a negative effect of role overload (Brown & Harris, 1978; Surtees *et al.* 1983; Williams *et al.* 1991) on psychological status. Our study did not support the role overload hypothesis, primarily because some roles increased the risk of psychological distress, while others decreased the risk. For the overall score of work–home roles psychological distress declined with increasing number of roles. Multiple roles were associated with higher social class in men, possibly indicating positive social-role experiences (i.e. having paid work and being a parent without the main burden of childcare), but with lower class among women, possibly reflecting a stressful combination of childcare responsibilities, and work outside the home. To our knowledge, few previous studies examine a broad range of roles and social support (Hibbard & Pope, 1987; Hall, 1992; Hunt & Annandale, 1993) or their impact on socio-economic gradients in psychological distress. One recent paper examining the gradient in self-rated health in women concluded that social roles (marital, parent, employee) did not account for the socio-economic gradient (Bartley *et al.* 1999).

Research on multiple roles has been developed primarily in studies of women, while that for psychosocial work characteristics has focused on men, or employed women. Our study brings these research areas together: it extends the number and characteristics of roles, and includes men and women in unpaid employment. The combination of work–home factors is not unique to our study, but our assessment of work–home factors on socio-economic gradients provides a new focus for research on psychological distress. For men, employment factors may provide part of the explanation for socio-economic differences in psychological distress. For women, contrary to expectations, neither work nor home factors had a substantial impact on the gradient, although psychosocial work characteristics and children had a moderate effect. This implicates other factors, social and biological, in the development of socio-economic gradients for both sexes. This is being pursued in current work.

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