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Social inequalities in antidepressant treatment and mortality: a longitudinal register study

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ABSTRACT

Background. Despite an increased prevalence of depression among people of low socio-economic position, it remains unclear whether their treatment with antidepressants appropriately matches their increased need compared with people from more affluent backgrounds. This study examined socio-economic differences in antidepressant prescriptions and mortality related to depressive disorders.

Method. A longitudinal register study of 17 947 male and 47 458 female local government employees with linked information on socio-economic indicators (education and occupational status) and data on antidepressant use and mortality associated with depressive disorder (suicide, alcohol-related deaths) during the years 1994 to 2000.

Results. In men, antidepressant treatment was less common among low educational groups than among high educational groups (OR 0·87, 95% CI 0·76–0·99) and a corresponding difference was seen between occupational statuses (OR for manual *v.* upper non-manual 0·72, 95% CI 0·62–0·84). In women, socio-economic position was not associated with antidepressant use. However, both among the men and women, employees with low socio-economic position had increased risk for mental-health-related mortality, as indicated by suicides, deaths from alcohol-related causes, and all-cause mortality.

Conclusions. These data suggest a mismatch in the treatment of depression relative to apparent clinical need, with the lowest levels of treatment concentrated in the lower socio-economic groups, despite evidence of their increased prevalence of depression and suicide.

INTRODUCTION

The consumption of antidepressants, especially selective serotonin reuptake inhibitors (SSRIs), is increasing. In the UK antidepressant prescriptions have more than doubled during the past two decades, with most of this increase due to increased prescribing of SSRIs (Middleton *et al.* 2001). Similar trends have been reported in the USA, Nordic countries and Australia (National Agency for Medicines, 2001; Hall *et al.* 2003; Reseland *et al.* 2006). These developments are interpreted as a sign of better recognition and treatment of mental disorders rather than a result of increasing psychiatric morbidity, although concerns have been raised about overprescribing and possible increased risk of suicide associated with these drugs (Healy, 2003; Gunnell & Ashby, 2004).

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An important public health question concerns the match between the distribution of care relative to clinical need. Socio-economic disadvantage is a major contributing factor to health differences and the graded associations of lower socio-economic position with higher psychiatric morbidity and its correlates, such as suicide, heavy drinking and all-cause mortality, are well known (Harris & Barraclough, 1997; Hemström, 2002; Qin *et al.* 2003; Cuijpers & Schoevers, 2004; Libby *et al.* 2005). If antidepressant treatment matches need, then higher treatment rates should be found among the socially less privileged groups. The absence of such an association may indicate socio-economic inequalities in access to treatment and suggests need for remedial action.

In a cross-sectional telephone survey of the US adult population, the overall rate of appropriate treatment for depressive and anxiety disorders was under 35% and lower socio-economic position was strongly associated with a higher probability of not receiving appropriate care (Young *et al.* 2001). Several other studies also suggest that people with low socio-economic position have comparatively low rates of treatment for mental disorders and are less likely than their more affluent counterparts to be treated by mental health specialists (Muntaner *et al.* 1994, 1995; Howard *et al.* 1996; Alegria *et al.* 2000; Bebbington *et al.* 2000; Wang *et al.* 2005).

However, contemporary evidence on socio-economic differences in antidepressant treatment and mental disorders is scarce. An ecological analysis of US county registers showed that in low-income areas there are lower levels of SSRI prescribing and higher suicide rates, but such aggregated data cannot determine social inequalities in antidepressant treatment at individual level (Gibbons *et al.* 2005). An individual-level register-based study found a higher 1-year incidence of antidepressant prescribed for low-level compared with high-level employees in the County of Funen, Denmark (Hansen *et al.* 2004). However, these findings are not necessarily generalizable to other populations and the social patterning of mental disorders was not investigated.

The 10-Town study examines health among all local government employees in ten Finnish towns (Vahtera *et al.* 2004). This study covers a wide range of socio-economic positions from cleaners to city mayors, the commonest groups being nurses and teachers. We linked data from this cohort to information from two comprehensive national registers to determine whether the socio-economic gradients in consumption of SSRIs and other antidepressants correspond with the socio-economic gradients in mortality related to mental disorders.

METHOD

Sample

This study is based on all local government employees who worked in the 10 towns for at least 1 year between 1994 and 1999, a total of 18 042 men and 47 591 women aged 19 to 64 (the female predominance corresponds to their greater employment among local government employers in Finland) (Vahtera *et al.* 2004). We obtained participants' personal identification numbers (a unique number that all Finns receive from birth) and occupational titles from the employers' registers. We used participants' personal identification numbers to extract data on education, antidepressant prescriptions, suicides, alcohol-related deaths and all-cause mortality from national registers. Personal identification numbers were removed from the data after the linkage. This study was conducted according to the guidelines of the Helsinki declaration, and the study protocol was approved by the Ethics Committee of the Finnish Institute of Occupational Health.

Socio-economic position

Education and occupational status were used as indicators of socio-economic position. Data on education in 1995 were obtained from the Statistics Finland (the Government's official statistical office). We dichotomized the level of education into primary or secondary *versus* tertiary.

To construct the occupational status variable we obtained occupational titles and months of work contract for each participant for each year from 1994 to 2000 from computer-stored employer records, if the work contract lasted at least 10 months in the given year. These records covered all periods of full-time employment, including date of commencement and, where appropriate, termination of work contract, as well as Statistics Finland's five-digit

occupational codes (Statistics Finland, 1987). We categorized occupational titles into three occupational status groups according to the Statistics Finland occupational classification: upper non-manual, lower non-manual, and manual employees (Statistics Finland, 1987).

Occupational status was defined for each employee annually to take into account changes in status during the follow-up. When characterizing the sample the longest held occupational status during the period from 1 January 1994 to 31 December 2000 was used. Occupational status was missing in 228 employees (0·3% of the total population) who were excluded from analyses.

Additional variables obtained from employers' registers were age and sex.

Antidepressant treatment

We used prescription data to identify antidepressant treatment during each year of follow-up. The prescription register of the Social Insurance Institution of Finland comprises out-patient prescription data classified according to the World Health Organisation's Anatomical Therapeutic Chemical (ATC) classification code (WHO Collaborating Centre for Drug Statistics Methodology, 2004). This covers the entire study population but excludes hospitalized patients. The national sickness insurance scheme covers the entire population, regardless of age or occupational title, and provides reimbursement for all filled prescriptions. Each prescription can cover a maximum of 3-month period.

We extracted all the prescriptions coded as N06A, which is the ATC code for antidepressants, from 1 January 1994 to 31 December 2000. We used this information only for those years when the participant had a job contract and defined occupational status. Outcome measures were any antidepressant treatment, SSRI treatment, tricyclic treatment and other antidepressant treatment (e.g. selective monoamine oxidase inhibitors). Diagnoses or dosages for prescriptions were not available.

Mortality

We collected information on deaths from the Statistics Finland register, which provides virtually complete population mortality data. The dates and causes of death were obtained for all the participants who died between 1 January 1994 and 31 December 2001. In addition to all-cause mortality, we analysed deaths from two causes strongly associated with depression – suicide and alcohol-related causes. Suicide was categorized as indicated by the International Classification of Diseases codes ICD-9 E950-E959 and ICD-10 X60-X84, and deaths from alcohol-related causes, as indicated by the International Classification of Diseases codes ICD-9 141, 143-146, 148-150, 155, 161, 291, 303, 571, 800-998 and ICD-10 C01-C06, C09, C10, C12-C15, C22, C32, F10, K70, S00-Y91 (Hart *et al*. 1999).

Statistical analysis

To examine the association between socio-economic position and antidepressant treatment we used information on education, repeated observations of occupational statuses and antidepressant prescriptions, and analysed these data with repeated measures logistic regression analysis across the 7-year follow-up. The repeated measurements of antidepressant treatments of the same subject are correlated observations. To take into account this correlation, we applied generalized estimating equations (GEE) approach. Differences in rates of antidepressant treatment between levels of socio-economic indicators were expressed as age- and calendar-year-adjusted odds ratios and their 95% confidence intervals. Analyses were performed separately for men and women (Kornstein *et al*. 2000; Parker *et al*. 2003).

We fitted Cox proportional hazards models to study age-adjusted associations of socio-economic position with cause-specific mortality. Follow-up period was calculated from the date of the first job contract to the date of death from alcohol-related causes, suicide or other death or, for those who did not die, the end of year 2001. All analyses were performed with the Statistical Analysis System, 8.2 program (SAS Institute Inc., Cary, NC).

RESULTS

Table 1 lists the characteristics of the 65 405 participants aged 19–64 with data on education and occupational status. The data included 125 814 person-years for tertiary education and 178 917 for primary and secondary education.

Table 1. *Sample characteristics*

	Men		Women	
	n	% or mean	*n*	% or mean
Mean age (yr)	17947	41·3	47458	40·6
Education				
Primary or secondary	10994	61·3	27510	58·2
Tertiary	6953	38·7	19948	42·0
Socio-economic position				
Upper non-manual	5924	33·0	15960	33·6
Lower non-manual	4180	23·3	23765	50·1
Manual	7843	43·7	7733	16·3
Any antidepressant treatment				
Yes	1687	9·4	6302	13·3
No	16260	90·6	41156	86·7
SSRI treatment				
Yes	1253	7·0	4755	10·0
No	16694	93·0	42703	90·0
Tricyclic treatment				
Yes	527	2·9	2154	4·5
No	17420	97·1	45304	95·5
Other antidepressant treatment				
Yes	536	3·0	1667	3·5
No	17411	97·0	45791	96·5
Suicide				
Yes	31	0·2	29	0·1
No	17916	99·8	47429	99·9
Death due to alcohol-related causes				
Yes	105	0·6	74	0·2
No	17842	99·4	47384	99·8
Death irrespective of cause				
Yes	294	1·6	332	0·7
No	17653	98·4	47126	99·3

SSRI, Selective serotonin reuptake inhibitor.

The corresponding figures were 99890 person-years for upper non-manual status, 126807 person-years for lower non-manual status and 78035 person-years for manual status. During the follow-up, 9·4% of men and 13·3% of women used antidepressants.

Trends in antidepressant treatment

Fig. 1 shows the trend in annual prevalence of antidepressant treatment from 1994 to 2000. There was an overall increase in the use of antidepressants during the follow-up with the proportion of people taking antidepressants in any given year growing from 1·9% to 3·3% in men and from 3·5% to 6·1% in women. The increase in antidepressant use was largely driven by SSRI treatments which doubled during the follow-up period (from 1·1% to 2·1% among men and 1·9% to 4·2% among women). The prevalence of patients treated with tricyclic antidepressants remained similar over the time period, but the use of other antidepressants increased in the last years of follow-up between 1997 and 2000.

Association between antidepressant treatment and mortality

The associations between antidepressant treatment and mortality are shown in Table 2. Antidepressant treatment was a strong marker of increased suicide rate, as indicated by an eight-fold age- and sex-adjusted excess risk for treated *versus* other employees. The corresponding hazard ratios for alcohol-related death and all-cause mortality were also high at 5·3 and 2·4 respectively. Differences in these hazard ratios between specific antidepressants were small.

Socio-economic position and antidepressant treatment

Table 3 presents the association between socio-economic position and antidepressant treatment. In men, antidepressant treatment was less common in employees with low socio-economic position than in employees with high socio-economic position. This difference was apparent only for SSRIs and non-tricyclic antidepressants, but for tricyclic antidepressants there was no difference in treatment rates between socio-economic groups. In women, no overall association was found between socio-economic position and antidepressant treatment. However, for tricyclic antidepressants the treatment rates were higher in groups with low socio-economic position than in groups with high socio-economic position.

Socio-economic position and mortality

Table 4 shows the association between socio-economic position and mortality. A total of 626 deaths occurred during the mean follow-up of 6·8 years. Of these, 60 were suicides and 179 deaths from alcohol-related causes. Among men, the likelihood of death from these specific causes and irrespective of cause was 1·1 to 2·2 times greater for low socio-economic position than for high socio-economic position. Among women, the corresponding hazard ratios varied between 1·2 and 2·1. The steepest socio-economic gradients in both men and women were for suicide.

Table 2. *Age- and sex-adjusted Cox proportional hazard models for the association between antidepressant treatment and mortality correlated with mental health*[a]

		Suicides ($n=60$)		Alcohol-related deaths ($n=179$)		All-cause mortality ($n=626$)	
Treatment	No. of treated	No. of deaths among treated	Hazard ratio (95% CI)	No. of deaths among treated	Hazard ratio (95% CI)	No. of deaths among treated	Hazard ratio (95% CI)
All participants ($n=65\,405$)							
Any antidepressant	7989	31	8·35 (5·00–13·95)	74	5·29 (3·92–7·15)	169	2·44 (2·04–2·92)
SSRI	6008	23	6·64 (3·93–11·23)	59	5·18 (3·79–7·10)	120	2·26 (1·85–2·76)
Tricyclic	2681	15	8·24 (4·53–14·97)	37	5·93 (4·11–8·57)	78	2·70 (2·13–3·43)
Other	2203	12	7·09 (3·75–13·39)	25	4·40 (2·88–6·72)	43	1·86 (1·36–2·53)

[a] Reference group comprised non-treated subjects (hazard ratio = 1·00).
CI, Confidence interval; SSRI, selective serotonin reuptake inhibitor.

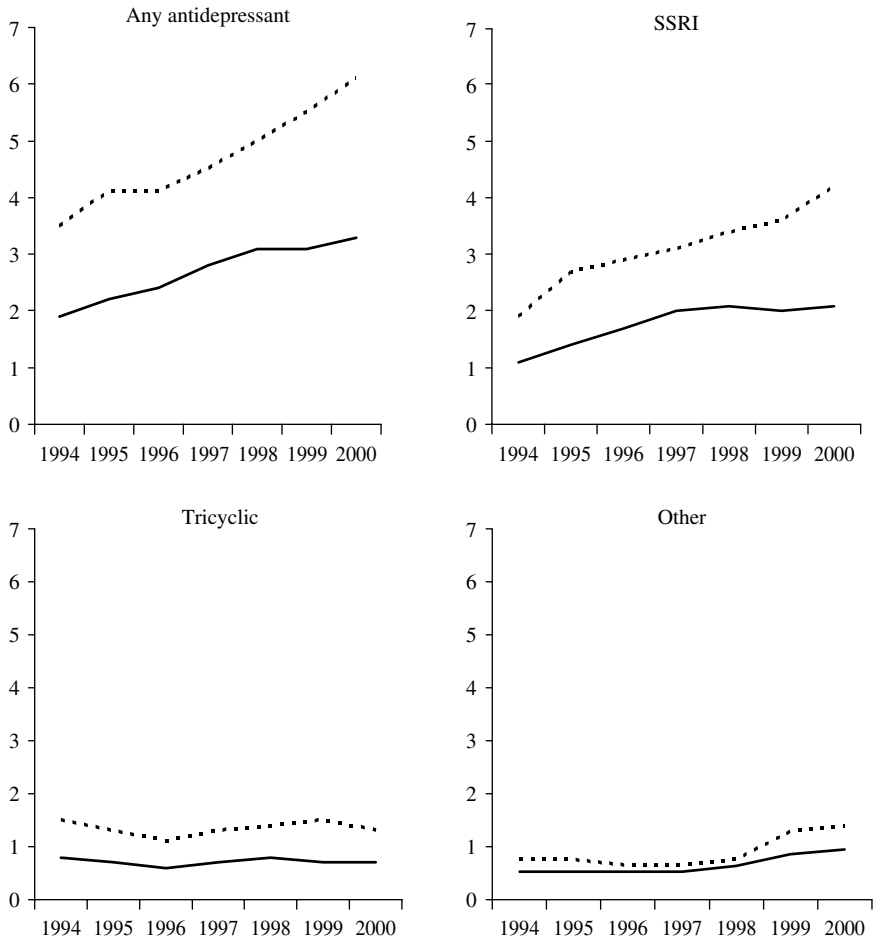

FIG. 1. Proportion (%) of participants with antidepressant prescriptions by year. ——, Men; - - -, women.

Table 3. *Age- and calendar-year-adjusted odds ratios (95% CI) for antidepressant treatment by socioeconomic position*[a]

Socio-economic position	Person-years[b]	Antidepressant treatment			
		Any antidepressant	SSRI	Tricyclic	Other
Men					
Education					
Tertiary	34 779	1·00	1·00	1·00	1·00
Primary or secondary	54 144	0·87 (0·76–0·99)	0·80 (0·69–0·94)	1·04 (0·80–1·36)	0·81 (0·63–1·04)
Occupational status					
Upper non-manual	28 481	1·00	1·00	1·00	1·00
Lower non-manual	19 564	1·00 (0·84–1·18)	0·92 (0·77–1·11)	1·25 (0·89–1·76)	0·88 (0·63–1·22)
Manual	40 877	0·72 (0·62–0·84)	0·63 (0·53–0·75)	1·10 (0·81–1·49)	0·64 (0·49–0·84)
Women					
Education					
Tertiary	91 036	1·00	1·00	1·00	1·00
Primary or secondary	124 774	1·08 (1·00–1·15)	0·95 (0·88–1·04)	1·51 (1·33–1·71)	1·05 (0·92–1·21)
Occupational status					
Upper non-manual	71 409	1·00	1·00	1·00	1·00
Lower non-manual	107 243	1·04 (0·97–1·12)	0·96 (0·88–1·04)	1·24 (1·08–1·42)	1·11 (0·95–1·29)
Manual	37 158	1·05 (0·95–1·15)	0·91 (0·81–1·02)	1·44 (1·23–1·70)	1·07 (0·88–1·29)

CI, Confidence interval; SSRI, selective serotonin reuptake inhibitor.
[a] Repeated measures logistic regression analysis across 7 years with Generalized Estimating Equations method.
[b] The total number of years participants were followed up in this study.

Table 4. *Age-adjusted Cox proportional hazard models for the association between socioeconomic position and mortality correlated with mental health*

Socio-economic position	No. of employees	Suicides		Alcohol-related deaths		All-cause mortality	
		No. of deaths	Hazard ratio (95% CI)	No. of deaths	Hazard ratio (95% CI)	No. of deaths	Hazard ratio (95% CI)
Men							
Education							
Tertiary	6953	7	1·00	31	1·00	89	1·00
Primary or secondary	10 994	24	2·17 (0·93–5·06)	74	1·64 (1·08–2·50)	205	1·65 (1·28–2·11)
Occupational status							
Upper non-manual	5985	7	1·00	32	1·00	70	1·00
Lower non-manual	4104	8	1·65 (0·60–4·55)	23	1·10 (0·64–1·88)	71	1·61 (1·16–2·24)
Manual	7858	16	1·65 (0·68–4·00)	50	1·13 (0·73–1·77)	153	1·61 (1·21–2·14)
Women							
Education							
Tertiary	19 948	11	1·00	27	1·00	120	1·00
Primary or secondary	27 510	18	1·20 (0·57–2·54)	47	1·27 (0·79–2·04)	212	1·24 (0·99–1·55)
Occupational status							
Upper non-manual	16 107	6	1·00	18	1·00	96	1·00
Lower non-manual	23 629	17	2·01 (0·79–5·09)	35	1·38 (0·78–2·43)	163	1·21 (0·94–1·55)
Manual	7722	6	1·83 (0·59–5·69)	21	2·14 (1·14–4·02)	73	1·29 (0·95–1·74)

CI, Confidence interval.

DISCUSSION

This 7-year follow-up of over 65 000 Finnish local government employees showed a lower antidepressant use among men with low socio-economic position than among men with high socio-economic position. For women, there was no overall association between socio-economic position and antidepressant treatment, though prescribing of tricyclic antidepressants

was greater in manual compared with non-manual women. At the same time, consistent with a number of other studies, we found that both among men and women, employees of low socio-economic position had an increased risk of mental-health-related mortality, as indicated by suicides and deaths from alcohol-related causes, as well as all-cause mortality (Hemström, 2002; Lorant *et al.* 2003; Qin *et al.* 2003). If prescribing were based on need then one might anticipate a greater prevalence of antidepressant use among those from the lower socio-economic groups. In reality what we see is lower prescribing among those with greater need among men and no relationship between prescribing and need in women, suggesting that in the treatment of mental health problems as well as other areas an inverse care law exists (Hart, 1971). These findings of antidepressant treatment are in agreement with earlier studies suggesting poorer care for mental health problems among people with low socio-economic position (Muntaner *et al.* 1994, 1995; Howard *et al.* 1996; Alegria *et al.* 2000; Bebbington *et al.* 2000; Young *et al.* 2001; Hansen *et al.* 2004).

In this study mental-health-related mortality was assessed from the same time-frame as treatment. We assumed that the increased mortality in lower social groups is due to the higher levels of underlying mental health morbidity. An alternative interpretation, not excluded by the data, is that levels of morbidity may be similar across the social groups, but that the suboptimal treatment may be the cause of the increased mortality in groups of low socio-economic position. We believe this is unlikely, as poor socio-economic position is associated with the incidence, as well as the prevalence, of psychiatric disorder, although it appears to be more strongly associated with persistence than incidence of depression (Lorant *et al.* 2003). Irrespective of whether this or the original interpretation is correct, the general conclusion that social inequalities in antidepressant treatment exist, and that these have important detrimental effects on health in those from lower socio-economic groups, is supported by our data.

We focused exclusively on antidepressant treatment although there are other mental health interventions available for patients, such as various forms of psychotherapy (Cohen *et al.* 2006). If depressive patients from lower socio-economic groups are more often treated with non-medication alternatives (e.g. psychotherapy, exercise on prescription) than those in a higher socio-economic position, then the inequality in treatment would be smaller than that indicated by our results based on prescriptions alone. However, additional statistics from the Social Insurance Institution of Finland regarding our cohort suggest that this is not the case, as only 0·4% of manual employees compared with 2·2% of the upper non-manual employees received compensation for psychotherapy between 1994 and 2002.

One possible reason for the weak or absent socio-economic differences in antidepressant treatment in women compared with men is that conventional measures of socio-economic position, based on occupation and education, are less relevant for married women, whose partner's occupation may also be important. This is supported by the observation that differences in mortality between socio-economic groups are smaller for women than men (Mackenbach *et al.* 1999, 2003; Martikainen *et al.* 2001). This issue may be less critical in our study, based on municipal employees, as housewives, the self-employed and pensioners were not included. Furthermore, while depressive disorders are more common in women than men (Kessler *et al.* 2003), women with mental health problems tend to receive treatment more often than men with such problems (Laukkala *et al.* 2001; Young *et al.* 2001) – and these higher overall levels of treatment-seeking may offset some of the socio-economic gradient.

Potential reasons for social inequality in antidepressant treatment

Among men participating in the present study, the inverse socio-economic gradient in antidepressant use was evident for SSRIs and other non-tricyclic antidepressants, but not for tricyclic antidepressants. Among women there was no association between socio-economic position and overall antidepressant prescribing. This masked a slightly less frequent use of SSRIs and a more frequent use of tricyclic antidepressants among lower socio-economic groups. It is noteworthy that, for patients, costs of tricyclic drug therapy are lower than those related to

SSRI medication. Inequality in SSRI treatment but not in tricyclic treatment would suggest that the cost of treatment (even after reimbursement) may be too high for low socio-economic position employees. It is also possible that higher relative prescription rate for tricyclic antidepressants in lower social groups is a marker of poorer access to high-quality mental care (Gibbons *et al.* 2005). There are also several other potential explanations for socio-economic inequality in antidepressant treatment, such as poorer detection or recognition of mental disorders, less accurate diagnosis and choice of treatment and dosage, or poorer compliance in low socio-economic groups. Alternatively, high socio-economic groups may demand mental health treatment and prescriptions that they do not need.

Study strengths and weaknesses

We determined socio-economic position with two independent indicators using educational level obtained from the Statistics Finland and employers' records on occupational status, and the findings were replicable across these two measures. Socio-economic position was available for 99·7% of the study population; thus bias due to selective sample attrition is unlikely. Use of participants' personal identification numbers (a unique number that all Finns receive from birth and that is used for all contacts with the social welfare and health care systems) enabled linkage of information on recorded antidepressant prescriptions with the socio-economic data and this linkage was successful for all of the participants.

The Social Insurance Institution prescription register is considered to include comprehensive data on antidepressant use among the non-hospitalized population (Martikainen & Rajaniemi, 2002). All prescriptions are written by a physician and the Social Insurance Institution obtains these data from all pharmacies in Finland as part of the national drug reimbursement scheme (Martikainen & Rajaniemi, 2002). The national sickness insurance scheme covers the entire population, regardless of age or occupational title, and provides reimbursement for virtually all filled prescriptions. In keeping with our findings, the most common antidepressants used in Finland were SSRIs and the consumption of these antidepressants grew steadily during the study period (National Agency for Medicines, 2001).

However, several limitations are noteworthy. The selection of variables included in the analysis was dependent on the availability of data in source registers, making some variables of interest absent in this study. First, we had no information on the diagnosis for which antidepressants were prescribed, preventing us from excluding those prescriptions that were for indications other than mental disorders, such as chronic pain or sleeping problems. Further, we had no information on dosage of treatment, which may have acted as a proxy for diagnosis, since in general lower doses are used for the management of non-mental health conditions. We believe this is unlikely to be a major source of bias, as depressive and anxiety disorders are clearly the main causes for recommended antidepressant use, particularly for SSRI prescribing (NICE, 2004; Mann, 2005).

Secondly, the absence of direct indicators of depressive disorders prevented us from fully ascertaining the socio-economic gradient in mental health in this population. However, we used three proxy measures as indicators of depressive disorders from mortality statistics and the findings regarding the socio-economic gradients accorded with those previously seen with direct morbidity indicators (Lewis *et al.* 1998; Lorant *et al.* 2003; Muntaner *et al.* 2004). Psychiatric disorder is the strongest known risk factor for suicide in terms of both effect size and attributable risk (Conwell *et al.* 1996; Harris & Barraclough, 1997; Qin *et al.* 2003) and the associations of depression with alcohol and other substance use disorders, as well as with all-cause-mortality, are repeatedly shown (Hemström, 2002; Libby *et al.* 2005; Gump *et al.* 2005). In agreement with these studies, we found antidepressant treatment to be a strong marker of increased risk for all these mortality indices, but in particular for suicide. A socio-economic gradient for these same mortality indices has also been reported previously (Johansson *et al.* 1997; Qin *et al.* 2003; Metcalfe *et al.* 2005) and associations in our study population were in keeping with the literature. Although physical illness and some psychiatric disorders not treated with antidepressants may also contribute to our mortality measures, it seems unlikely that the socio-economic gradient

in mental health and depression would be totally missing in our study cohort.

Finally, further research is needed to assess the generalizability of the present findings to other populations. Our cohort did not include the unemployed and thus inequalities observed in a general population might be greater than those seen in local government employees participating in this study. Although there is a national imbursement system in Finland, the socio-economic gradient in health is of a similar magnitude to that reported throughout several different European and American populations. Indeed, previous studies suggest that improving parity and the financing of care may not always lead to improved quality (Busch *et al*. 2006).

Policy implications

This evidence is important in terms of policy. Our data suggest that there is a mismatch in the treatment of depression relative to clinical need, in particular among men with the greatest under-treatment concentrated in the lower socio-economic strata with the highest clinical need. Considering that pharmacotherapy is an important element in the treatment of depressive disorders, such a selective under-treatment may be an important contributing factor in socio-economic inequalities to mental health disorders. These findings suggest that efforts are needed to ensure appropriate use of antidepressant medication, based on clinical need and not influenced by socio-economic position or other personal characteristics.

Further research is needed to examine the factors that might influence the disparities in antidepressant prescribing. Socio-economic differentials in prescriptions (or their lack in relation to need) may reflect individual patient factors (possibly with those from lower socio-economic groups being more reluctant to seek health care in relation to mental health problems), individual doctor factors (with doctors assuming different diagnoses based on occupational status) or health care delivery factors.

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DECLARATION OF INTEREST

None.

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