Social and economic variation in general practice consultation rates amongst men aged 16–39

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We examined socio-economic differences in consultation rates in 16–39 year old men using data collected in 1991/2 by the Fourth National Survey of Morbidity in General Practice. Mean annual consultation rates per person were 2.21 in men aged 16–24 years and 2.52 in those aged 25–39 years. In 25–39 year old men overall consultation rates were 42 per cent higher in social class IV/V than class I/II. Amongst 16–24 year olds, increasing deprivation as measured by type of housing and employment status were associated with increased consultation rates, but there was no clear association between social class and consultation rates. Amongst 25–39 year olds, increasing deprivation, as measured by social class, housing tenure or employment status, was associated with higher consultation rates for all illnesses, mental illness and injury and poisoning. In contrast, consultations for preventive health care were lower in young men in social class IV/V than class I/II and in council tenants rather than owner-occupiers. We conclude that socio-economically disadvantaged young men were more likely to consult general practice services in general and for mental illness and injury and poisoning. They received less preventive health care than more advantaged men who are at lower risk of premature mortality.

Introduction

There is growing concern over the health of young men, a group who are experiencing increasing levels of mental disorders, drug misuse, violence, injury and poisoning.[1–4] Furthermore, secular trends in mortality amongst this group have not shown the long-term reductions in death rates seen in women and other age groups.[5] Instead, mortality has plateaued, and for 25–34 year old males, death rates increased during the 1980s and early 1990s. These patterns have been attributed to rising mortality from suicides[6] and infections including HIV.[5] Amongst young men, those most at risk of premature death are in social class V.[7–9]

Young men are thought to be less likely to recognise that they have a health problem or to seek professional help than women, young children, or older age groups,[10] but there are few data on variations in use of health services specifically amongst young men.[3] Multivariable analysis of the Fourth National Survey of Morbidity in General Practice showed that almost all age/sex groups in the manual social classes had a 10 per cent increased consultation rate for all illnesses.[11] In contrast, consultations for preventive reasons were 10 per cent lower for the manual than the non-manual classes. Other studies have shown that residents of deprived areas and members of ethnic minorities have higher than average consultation rates,[12] material deprivation is associated with many common self-reported diseases,[13] and uptake of preventive services is low in deprived areas.[12] Lifestyle patterns influencing health, such as smoking or drug dependence and material circumstances vary by socio-economic factors,[3] and unemployment and divorce may differentially affect men.[14 15] There are also marked socio-economic gradients in the exposure of men to stressful life events.[16]

The government in England aims to reduce health inequalities, and their priority areas include reducing rates of suicides and accidents which are major causes of premature mortality in young men.[17] About 40 per cent of those who commit suicide have been in contact with the health service, mostly the general practitioner, in the preceding month.[18] An improved understanding of social and economic variations in primary health care utilization by young men may help in the design of interventions more appropriate to their needs. This in turn has implications for the planning of services and for the provision of adequate resources to improve health.[12,13,19,20] Using data from the Fourth National Survey of Morbidity in General Practice[11] we investigated socio-economic variations in use of general practitioner services in young men aged between 16 and 39.

Subjects and methods

The Fourth National Survey of Morbidity in General Practice was conducted between September 1991 and August 1992.[11] Sixty volunteer general practices in England and Wales participated, providing a 1 per cent sample of the population (502,493 patients; 468,042 person-years at risk). Patients were generally representative of the population of England and Wales when compared with the 1991 census, although relatively few inner-city practices participated in the survey so that ethnic minority groups and people living alone were under-represented. Compared with England and Wales, the survey practices tended to be larger and employ more staff, and the principals were younger.

Recording and validation of morbidity data

General practitioners and nurses recorded information on all face to face contacts with patients fully registered for part or the whole of the study period. A consultation was defined as each diagnosis or reason for contact recorded during a contact. Details of consultations were entered onto the practice computer and given a Read code from which an International Classification of Diseases Ninth Revision (ICD9) code was later assigned systematically at the Office of Population Censuses and Surveys and categorized as serious, intermediate or minor.[11] Consultations for preventive health care included those for vaccinations, chronic disease monitoring, and screening examinations and investigations. Validation studies showed that 96 per cent and 95 per cent of surgery and of home contacts were recorded, and that 93 per cent of diagnoses were correctly recorded.

Socio-economic data

Socio-economic data were collected by face to face interview with trained field workers on 83 per cent of all patients registered with the 60 practices at any time during the study year, regardless of whether or not they had consulted during the study period.[21] Most interviews took place in the surgery. Reasons for non-response amongst all subjects (age/sex-group specific data are not available) were: refused interview (1 per cent); moved away (4 per cent); not at stated address and not contactable (8 per cent); other (3 per cent). Each person's social class was derived from their relevant occupation and employment status and assigned using the Registrar-General's classification.

Statistical methods

Overall, 67,721 (74.1 per cent) men aged 16-39 years were interviewed. Approximately 12 per cent of patients on the practices' age/sex register had moved away or were not at the stated address and not contactable. Up to one third of these non-responders may have been ineligible due to practice list inflation (ONS - personal communication) making the effective response rate higher. 65,594 had complete data for all of the socio-economic variables considered here and 64,136 (70.2 per cent) also had urban/rural area of residence recorded. The main analysis was restricted to this subset of 64,136 men. Because there was clear evidence that consultation rates varied between subjects, all analyses used negative binomial regression.[22] This is an extension of Poisson regression which allows for variation in consultation rates between subjects. Analyses also allowed for proportion of the year during which each subject was registered with the practice.

We examined the effect of the following measures of deprivation on consultation rates: social class, housing tenure and employment status using social class I/II, owner-occupier tenure and full-time employment respectively as reference categories. Rate ratios per category of social class were also computed. These represent the amount by which consultation rates are multiplied per category change in social class. For example, if the rate ratio is 1.1 per category and the consultation rate is 2 per year in social class II, then consultation rates would be 2.2 per year in social class IIINM, 2.42 per year in social class IIIM and so on.

Potential confounding factors chosen *a priori* for inclusion in models were ethnic group, urban/rural residence, smoking status and marital status. Likelihood ratio tests were used to assess whether the effects of socio-economic variables varied with age or smoking status (tests for interaction). If p-values for interaction were <0.1 we examined the effect of socio-economic variables in strata defined by age or smoking status as appropriate. Analyses were performed using Stata.[23]

Results

Men aged 16–39 years of age accounted for 18.2 per cent (91,409/502,493) of all patients in the morbidity survey and for 10.9 per cent (167,609/1,530,835) of consultations with a doctor or a nurse. 56.1 per cent of young men consulted a general practitioner or a practice nurse at least once during the survey, compared with 78 per cent of patients in the overall sample. 85 per cent (143,233/167,609) of consultations were for episodes of illness, and 99 per cent (166,722/167,609) involved contact with a doctor.

Representativeness of sample

Amongst the 64,136 men included in the main analysis, the overall consultation rate was 2.41 (95 per cent CI: 2.39 to 2.44) per person per year. Amongst the 27,273 excluded men, the consultation rate was 1.07 (95 per cent CI: 1.04 to 1.10) per person per year. This lower rate is due at least in part to non-responders having moved away but still remaining on the practice register. There was little difference between analysed and excluded men in terms of proportion aged 16–24 years (35.6 per cent *v*. 35.1 per cent; p=0.14), mean distance in kilometres from house to practice (1.87 *v*. 1.87; p=0.96) and the proportions in rural areas of residence (11.8 per cent *v* 11.7 per cent; p=0.91).

There was strong evidence of interaction between the effects of age group and the socio-economic variables on consultation rates (p<0.0001), hence age-group specific results are presented. There were no interactions with smoking.

Overall consultation rates

Mean annual consultation rates per person were 2.21 (95 per cent CI: 2.17 to 2.25) in men aged 16 to 24 years and 2.52 (95 per cent CI: 2.49 to 2.55) in those aged 25–39 years (Table 1). Overall consultation rates were highest in men from social classes IV/V. In men aged 25 to 39 consultation rates were 42 per cent (95 per cent CI: 36 per cent to 47 per cent) higher in those from social class IV/V than in those from class I/II, but in those aged 16 to 24 years the increase in rate was only 9 per cent (95 per cent CI: 2 per cent to 16 per cent). The crude rate ratios per category of social class were 1.04 (1.02 to 1.06) and 1.12 (1.11 to 1.13) for 16–24 and 25–39 year olds respectively. Consultation rates amongst men from council or rented accommodation were higher compared with

owner-occupiers. Part-time employment, or waiting/seeking work, or being permanently sick were each associated with higher consultation rates than full-time employment in both age groups. South Asian ethnicity, or living in an urban area, or smoking, or being separated, widowed or divorced were also associated with higher consultation rates in both age-groups.

Consultation rates for preventive health care

Consultation rates for preventive health care were highest in men from social class I/II (Table 1). Compared to social class I/II, rates in class IV/V were 37 per cent and 31 per cent lower in age groups 16–24 and 25–39 respectively. Council house tenure was associated with lower consultation rates for preventive health care than owner-occupiers, but living in other rented accommodation was associated with higher rates. Being a student, or of South Asian ethnicity or separated, widowed or divorced were factors individually associated with higher consultation rates in both age-groups.

Multivariable analyses

Controlling for smoking status, marital status, urban/rural residence, and ethnic group had little effect on the associations between social class and consultation rates. However, controlling for tenure and economic position attenuated observed associations. Table 2 shows that there was no social class gradient in men aged 16–24 years after controlling for other factors. In men aged 25–39 years the association between social class and consultation rates was reduced to 1.05 (95 per cent CI: 1.03 to 1.06) per social class category. Council or rented tenure were independently associated with increased consultation rates compared with owner-occupiers. The other factors that remained associated with increased consultation rates were waiting/seeking

Table 1 **Age-specific annual consultation rates with general practitioners and practice nurses for any reason or preventive health care, stratified by social and economic variables**

Characteristic	No. of people	Percentage	Annual consultation rate per person			
			Any consultation		Preventive health care	
Age group (years)			***16–24 N=22,507***	***25–39 N=41,629***	***16–24 N=22,507***	***25–39 N=41,629***
Total	**64,136**	**(100)**	**2.21 (2.17 to 2.25)***	**2.52 (2.49 to 2.55)***	**0.14 (0.13 to 0.15)***	**0.22 (0.21 to 0.22)***
Social class						
I & II	16,414	(25.6)	2.25	2.11	0.19	0.26
IIIN	7,387	(11.5)	2.13	2.42	0.17	0.24
IIIM	20,237	(31.6)	2.29	2.63	0.12	0.19
IV & V	12,986	(20.2)	2.46	2.99	0.12	0.18
Other†	7,112	(11.1)	1.93	3.52	0.16	0.26
Tenure‡						
Owner-occupied	39,853	(62.1)	2.01	2.22	0.13	0.22
Council	9,482	(14.8)	2.57	3.49	0.09	0.16
Other rented	7,218	(11.3)	2.67	3.11	0.24	0.27
Communal	471	(0.7)	1.86	3.15	0.21	0.29
Employment status in the last week‡						
Employed full time	48,075	(75.0)	2.15	2.27	0.13	0.22
Employed part time	945	(1.5)	2.30	2.98	0.15	0.20
Waiting/seeking	6,455	(10.1)	2.59	3.31	0.13	0.19
Student	572	(0.9)	1.86	2.62	0.17	0.34
Permanently sick	751	(1.2)	6.40	7.65	0.18	0.21
Other**	226	(0.4)	5.47	3.99	0.19	0.26
Ethnic group‡						
White	55,532	(86.6)	2.20	2.51	0.14	0.21
Afro-Caribbean	391	(0.6)	2.56	2.53	0.15	0.26
South Asian	658	(1.0)	2.59	3.07	0.34	0.41
Other††	443	(0.7)	2.19	2.55	0.25	0.26
Urban/rural residence‡						
Urban	50,336	(78.5)	2.25	2.57	0.14	0.22
Rural	6,688	(10.4)	1.87	2.15	0.14	0.22
Smoking status‡						
Smoker	20,431	(31.9)	2.44	2.91	0.13	0.19
Non smoker	36,593	(57.1)	2.10	2.31	0.15	0.23
Marital status‡						
Single	28,104	(43.8)	2.18	2.63	0.14	0.22
Married	26,212	(40.9)	2.50	2.35	0.18	0.21
Separated/widowed/divorced	2,708	(4.2)	3.23	3.67	0.28	0.25

* 95% confidence interval for the overall rate estimate.

† Social class – other was: armed forces, unoccupied (students, housewives, persons of independent means, permanently sick or disabled, persons who have never worked and occupation not stated) and inadequately described.

‡ Missing data: n=7,112.

** Employment status in the last week – other was: retired from paid work; looking after home or family.

†† Ethnic group – other was: Chinese, Sri Lankan and other.

employment, being a student, permanently sick or 'other' (looking after a family), South Asian ethnicity, urban residence, smoking, and being separated, widowed or divorced. Consultation rates for preventive health care decreased with lower social class and with council tenure with little attenuation of the rate ratios after controlling for other factors (Table 2). There was little attenuation of the rate ratios for the association between increased consultation rates for preventive health care and other rented accommodation, economic position, South Asian ethnicity or marital status after controlling for other factors.

Disease specific associations

Table 3 shows annual consultation rates for all illness, mental illness and injury and poisoning according to social class. Decreasing social class was associated with increasing consultation rates for all illness, mental illness and injury and poisoning in men aged 25–39. There was no strong association between social class and consultation rates for all illness or mental illness in men aged 16–24, but consultations for injury and poisoning increased with lower social class in this age group. Amongst 16–24 year olds the association between social class and rates of consultation for mental illness was confounded by smoking. The crude rate ratio per social-class category was 1.20 (95 per cent CI: 1.08 to 1.33); after controlling for smoking it was 1.09 (95 per cent CI: 0.98 to 1.20). However, this confounding effect was not as strong in 25–39 year olds amongst whom the crude rate ratio per social-class category was 1.44 (95 per cent CI: 1.37 to 1.52) and after controlling for smoking was 1.31 (95 per cent CI: 1.24 to 1.38). The observed associations between all illness and social class varied little by the severity of the illness (data not shown).

Table 2 **Age-specific annual consultation rates per person for any consultation or preventive health care; rate ratios and 95% confidence limits controlling for all other factors in the table***

Characteristic	Multivariable rate ratio (95% CI)			
	Any consultation		Preventive health care	
	16-24 N=22,507	*25-39 N=41,629*	*16-24 N=22,507*	*25-39 N=41,629*
Social class				
I & II	1	1	1	1
IIIN	0.94 (0.88 to 1.01)	1.10 (1.05 to 1.15)	0.88 (0.71 to 1.09)	0.92 (0.82 to 1.02)
IIIM	0.99 (0.93 to 1.05)	1.10 (1.07 to 1.14)	0.65 (0.54 to 0.79)	0.75 (0.69 to 0.81)
IV & V	1.01 (0.95 to 1.08)	1.15 (1.10 to 1.19)	0.66 (0.54 to 0.81)	0.74 (0.67 to 0.82)
Other†	0.72 (0.66 to 0.79)	0.82 (0.74 to 0.91)	0.53 (0.40 to 0.70)	0.88 (0.68 to 1.14)
Trend‡	1.01 (0.99 to 1.03)	1.05 (1.03 to 1.06)	0.86 (0.81 to 0.92)	0.89 (0.86 to 0.92)
Tenure				
Owner-occupied	1	1	1	1
Council	1.16 (1.10 to 1.21)	1.26 (1.22 to 1.31)	0.70 (0.59 to 0.83)	0.84 (0.75 to 0.93)
Other rented	1.27 (1.21 to 1.33)	1.21 (1.16 to 1.26)	1.90 (1.64 to 2.19)	1.23 (1.10 to 1.37)
Communal	0.94 (0.85 to 1.03)	1.12 (0.97 to 1.29)	1.53 (1.16 to 2.01)	1.22 (0.85 to 1.76)
Employment status in the last week				
Employed full time	1	1	1	1
Employed part time	1.06 (0.94 to 1.20)	1.19 (1.07 to 1.34)	1.17 (0.79 to 1.72)	0.95 (0.71 to 1.29)
Waiting/seeking	1.20 (1.14 to 1.27)	1.24 (1.19 to 1.30)	1.21 (1.01 to 1.44)	0.98 (0.87 to 1.10)
Student	1.20 (1.10 to 1.30)	1.21 (1.07 to 1.37)	1.58 (1.22 to 2.05)	1.34 (0.98 to 1.81)
Permanently sick	3.39 (2.93 to 3.92)	3.10 (2.85 to 3.36)	1.70 (1.05 to 2.76)	1.06 (0.84 to 1.33)
Other**	2.41 (1.67 to 3.46)	1.53 (1.29 to 1.82)	1.96 (0.61 to 6.34)	1.29 (0.83 to 2.00)
Ethnic group				
White	1	1	1	1
Afro-Caribbean	1.21 (0.97 to 1.49)	0.97 (0.84 to 1.13)	1.11 (0.56 to 2.22)	1.12 (0.79 to 1.61)
South Asian	1.26 (1.09 to 1.47)	1.28 (1.15 to 1.43)	2.24 (1.50 to 3.35)	1.90 (1.48 to 2.45)
Other††	1.08 (0.89 to 1.31)	0.97 (0.85 to 1.11)	1.33 (0.78 to 2.25)	1.02 (0.74 to 1.41)
Urban/rural residence‡‡				
Urban	1	1	1	1
Rural	0.86 (0.82 to 0.91)	0.91 (0.87 to 0.95)	0.99 (0.84 to 1.17)	0.98 (0.89 to 1.14)
Smoking status				
Smoker	1	1	1	1
Non smoker	0.94 (0.91 to 0.98)	0.93 (0.90 to 0.95)	1.14 (1.01 to 1.29)	1.10 (1.03 to 1.18)
Marital status				
Single	1	1	1	1
Married	1.06 (0.98 to 1.14)	1.00 (0.98 to 1.03)	1.52 (1.21 to 1.89)	0.93 (0.87 to 1.00)
Separated/widowed/divorced	1.29 (1.03 to 1.62)	1.34 (1.27 to 1.41)	2.33 (1.21 to 4.49)	1.18 (1.03 to 1.36)

* With social class entered as a categorical variable.
† Social class – other was: armed forces, unoccupied (students, housewives, persons of independent means, permanently sick or disabled, persons who have never worked and occupation not stated) and inadequately described.
‡ Based on linear increase in log rate per category of social class (excluding other).
** Employment status in the last week – other was: retired from paid work; looking after home or family.
†† Ethnic group – other was: Chinese, Sri Lankan and other.
‡‡ Additionally adjusted for distance from patients' house to the practice.

Table 3 **Social class specific annual consultation rates per person for all illness, mental disorders, and injury and poisoning; crude rates and multivariable rate ratios (95% confidence limits) controlling for social and economic factors***

	Social Class						
	Rate in all subjects	I&II	IIIN	IIIM	IV/V	Other	Rate ratio per category†
16–24 years							
All illness							
Rate	1.94	1.96	1.86	2.01	2.14	1.71	-
Multivariable rate ratio (95% CI)	-	1	0.94 (0.87 to 1.01)	1.00 (0.94 to 1.06)	1.02 (0.95 to 1.08)	0.74 (0.68 to 0.81)	1.01 (0.99 to 1.03)
Mental illness							
Rate	0.11	0.09	0.10	0.12	0.15	0.10	-
Multivariable rate ratio (95% CI)	-	1	1.17 (0.82 to 1.67)	1.09 (0.80 to 1.47)	1.21 (0.89 to 1.66)	0.80 (0.52 to 1.23)	1.05 (0.95 to 1.16)
Injury and poisoning							
Rate	0.30	0.25	0.25	0.36	0.40	0.20	-
Multivariable rate ratio (95% CI)	-	1	1.04 (0.89 to 1.22)	1.41 (1.24 to 1.60)	1.54 (1.34 to 1.76)	0.86 (0.71 to 1.05)	1.18 (1.13 to 1.23)
25–39 years							
All illness							
Rate	2.10	1.75	2.02	2.20	2.51	2.82	-
Multivariable rate ratio (95% CI)	-	1	1.10 (1.06 to 1.16)	1.11 (1.07 to 1.15)	1.16 (1.11 to 1.21)	0.80 (0.72 to 0.89)	1.05 (1.04 to 1.06)
Mental illness							
Rate	0.19	0.10	0.17	0.20	0.31	0.62	-
Multivariable rate ratio (95% CI)	-	1	1.43 (1.18 to 1.73)	1.17 (1.01 to 1.34)	1.28 (1.08 to 1.51)	1.03 (0.68 to 1.56)	1.07 (1.02 to 1.13)
Injury and poisoning							
Rate	0.28	0.18	0.25	0.33	0.37	0.25	-
Multivariable rate ratio (95% CI)	-	1	1.37 (1.24 to 1.51)	1.70 (1.58 to 1.82)	1.86 (1.71 to 2.02)	1.11 (0.88 to 1.41)	1.24 (1.21 to 1.28)

* Tenure, ethnic group, employment status, urban/rural residence, smoking status, and marital status.
† Based on linear increase in log rate per category of social class (excluding 'other').

Table 4 shows annual consultation rates for all illness, mental illness and injury and poisoning by housing tenure. Strong associations were observed between living in council or other rented accommodation and consultation rates in both age-groups, particularly for mental illnesses. Communal housing was associated with mental illness amongst 25–39 year olds. Table 5 shows annual consultation rates by employment status. Amongst both age groups there were strong associations between waiting/seeking employment and consultations for all illness and mental illness. Amongst 16–24 year olds there was an association between being a student and consultations for all illness. Amongst 25–39 year olds part-time work or being a student were associated with all illness and with mental illness. Amongst 16–24 year olds permanent sickness and looking after a family (category of 'other') were associated with all illness, mental illness and injury and poisoning. Amongst 25–34 year olds permanent sickness was associated with all illness, mental illness and injury and poisoning.

Table 4 **Housing tenure specific annual consultation rates per person for all illness, mental disorders, and injury and poisoning; crude rates and multivariable rate ratios (95% confidence limits) controlling for social and economic factors***

Characteristic	Tenure			
	Owner occupied	Council	Other rented	Communal
16–24 years				
All illness				
Rate	1.78	2.26	2.29	1.59
Multivariable rate ratio (95% CI)	1	1.17 (1.11 to 1.22)	1.23 (1.17 to 1.29)	0.90 (0.82 to 0.99)
Mental illness				
Rate	0.08	0.19	0.18	0.11
Multivariable rate ratio (95% CI)	1	1.34 (1.07 to 1.68)	1.76 (1.40 to 2.20)	1.16 (0.73 to 1.84)
Injury and poisoning				
Rate	0.27	0.38	0.35	0.23
Multivariable rate ratio (95% CI)	1	1.21 (1.10 to 1.33)	1.22 (1.10 to 1.34)	1.06 (0.86 to 1.31)
25–39 years				
All illness				
Rate	1.84	2.97	2.57	2.64
Multivariable rate ratio (95% CI)	1	1.30 (1.25 to 1.35)	1.21 (1.16 to 1.27)	1.14 (0.98 to 1.32)
Mental illness				
Rate	0.11	0.42	0.41	0.63
Multivariable rate ratio (95% CI)	1	1.79 (1.53 to 2.09)	1.58 (1.33 to 1.89)	1.84 (1.05 to 3.24)
Injury and poisoning				
Rate	0.25	0.38	0.32	0.22
Multivariable rate ratio (95% CI)	1	1.23 (1.13 to 1.33)	1.18 (1.07 to 1.29)	0.88 (0.62 to 1.23)

* Social class, ethnic group, employment status, urban/rural residence, smoking status, and marital status.

Discussion

These analyses showed variations in consulting patterns among young men according to measures of socio-economic status. Although young men are generally perceived as being infrequent users of general practitioner services,[3] mean consultation rates were greater than 2 per person per year suggesting that young men do present to primary care. Furthermore, rates of consultation that were socio-economically patterned were observed. Our results are based on a large database of individual-level socio-economic data collected prospectively and are, therefore, robust and likely to be broadly representative. Although the study practices were volunteers there was at least one practice per health district in England and Wales. The study was restricted to 70.2 per cent of men listed on the practices' age-sex register, a potential source of bias given that non-responders had lower consultation rates. However, some 12 per cent of all non-responders had moved or were not contactable.[11] Up to one third of these non-responders may have been ineligible (ONS - personal communication), and practice list inflation amongst young men may be even greater.[24] The effective response rate is therefore likely to be higher than 70.2 per cent, a reasonable response rate for this age-group of men in a general practice-based study. There was little difference between included and excluded subjects in terms of age, distance from practice and area of residence.

Previous multivariable analyses have been performed on a number of age/sex groups as part of the Fourth National Survey of Morbidity in General Practice.[11] The current study focuses on consultation patterns in young-men. Because there was clear evidence that consultation rates varied between subjects, all analyses used negative binomial regression to compute rate ratios and confidence intervals allowing for between-subject variability.[22] In addition, we presented age-band specific results within the 16–39 year old age group since we found strong statistical evidence of interaction between age and socio-economic variables on consultation rates.

The crude consultation rates clearly show large increases according to different measures of socio-economic disadvantage. By simultaneously controlling for the different measures of deprivation used in this study, we have shown that social class, housing tenure and employment status are each independently associated with higher consultation rates. Amongst 25–39 year olds, adjusted consultation rates for any reason were 15 per cent higher in social class IV/V than in class I/II. There was no association between social class and overall consultation rates amongst 16–24 year olds. In contrast, housing tenure and employment status were associated with high overall consultation rates amongst both 16–24 and 25–39 year olds, suggesting that social class may not be a good measure of deprivation amongst young men beginning their employment careers.

Amongst 25–39 year olds in particular, consultations for mental illness and injury and poisoning were associated with lower social class, and council or rented tenure. Furthermore, consultations for mental illness were associated with working part time, waiting/seeking employment, being a student and permanent sickness. These findings suggest that some of the socio-economic gradient in the older age group is likely to be secondary to health selection i.e. poor health influenced social circumstances. Consultations for preventive health care were lower amongst men from social class IV/V than in those from social class I/II suggesting the inverse care law operates amongst young-men.[25] We were unable to examine health care utilisation amongst young men not registered with a general practitioner, although this omission is likely to mean that the socio-economic gradients that were observed in this study are underestimates.

Hospital admission rates, which are influenced by variations in supply and demand, have been criticised as a poor proxy for morbidity.[26] General practice data may provide a more complete picture of the interactions between disease and health services because most people are registered with a general practitioner,[27] and because general practice

Table 5 **Employment status specific annual consultation rates per person for all illness, mental disorders, and injury and poisoning; crude rates and multivariable rate ratios (95% confidence limits) controlling for social and economic factors***

Characteristic	Employment status in the last week					
	Full time	Part time	Waiting/seeking	Student	Permanently sick	Other†
16–24 years						
All illness						
Rate	1.89	2.08	2.26	1.66	5.14	3.72
Multivariable rate ratio (95% CI)	1	1.09 (0.96 to 1.23)	1.19 (1.13 to 1.26)	1.19 (1.10 to 1.30)	3.10 (2.67 to 3.59)	1.87 (1.28 to 2.72)
Mental illness						
Rate	0.07	0.12	0.28	0.06	1.15	1.14
Multivariable rate ratio (95% CI)	1	1.48 (0.84 to 2.61)	3.38 (2.66 to 4.30)	1.31 (0.88 to 1.95)	18.25 (9.60 to 34.70)	11.45 (2.33 to 56.23)
Injury and poisoning						
Rate	0.33	0.29	0.33	0.20	0.66	1.03
Multivariable rate ratio (95% CI)	1	0.87 (0.68 to 1.13)	0.97 (0.87 to 1.08)	0.93 (0.78 to 1.10)	2.23 (1.67 to 2.98)	2.97 (1.52 to 5.80)
25–39 years						
All illness						
Rate	1.89	2.57	2.83	2.17	6.12	2.84
Multivariable rate ratio (95% CI)	1	1.22 (1.09 to 1.38)	1.26 (1.21 to 1.32)	1.22 (1.07 to 1.38)	2.97 (2.73 to 3.24)	1.28 (1.07 to 1.54)
Mental illness						
Rate	0.11	0.32	0.56	0.35	1.61	0.29
Multivariable rate ratio (95% CI)	1	1.85 (1.17 to 2.92)	2.76 (2.31 to 3.29)	2.25 (1.38 to 3.68)	8.51 (6.14 to 11.80)	1.76 (0.85 to 3.66)
Injury and poisoning						
Rate	0.27	0.28	0.33	0.20	0.49	0.50
Multivariable rate ratio (95% CI)	1	0.95 (0.73 to 1.23)	0.97 (0.88 to 1.07)	0.90 (0.67 to 1.21)	1.56 (1.30 to 1.86)	1.49 (1.05 to 2.13)

* Social class, ethnic group, tenure, urban/rural residence, smoking status, and marital status.
† Employment status in the last week – other was: retired from paid work; looking after home or family.

consultations are generally for less severe disease. However, patient consulting rates represent the proportion of a particular disease or condition presented to doctors or nurses in general practice.[27] Therefore, these findings reflect a combination of socio-economic differences in morbidity, thresholds for consultation, lay support networks, and access to services, including A&E departments.[28]

Comparison with other studies

The results of this analysis in young men are broadly consistent with previous research linking deprivation characteristics with general practice consultations[29–30] and morbidity.[2, 31] However, patterns in young men observed in this study do differ from patterns seen in other populations.[32–34] Results from the Second National Survey of Morbidity in General Practice conducted in 1970–71 showed that in men aged 15–64 there was only a very slight social class gradient for patients consulting for all illnesses, a strong positive social class gradient for depressive neurosis and accidents, violence and poisoning and a negative gradient for anxiety neurosis.[34] In the General Household Survey consultations amongst middle-aged men were 28 per cent higher in those living in council compared with owner-occupied properties,[29] but there was only a non-significant 6 per cent increase in consultations when manual were compared with non-manual socio-economic groups. A steeper socio-economic gradient may have been masked by misclassification resulting from the relatively crude binary grouping of social class, and because the data were based on retrospective self-reports. The Health and Lifestyle Survey found no social class gradient in self reported mean number of symptoms experienced in the last month amongst 18-39 year old males, in contrast to a steep social class gradient in all other age and sex groups.[35] However, the Health and Lifestyle Survey may have been under-powered to detect small but important socio-economic differences among young men, and the use of an age group 18–39 may mask important differences within this group.

The increased consultation rates for mental illness amongst lower social classes and men living in council, rented or communal accommodation accords with the finding that rates of both suicide and parasuicide (two well accepted indicators of mental distress) are related to socio-economic deprivation.[6] Our findings are in line with the known association between unemployment and health,[36] but we also found that 25–39 year old men who worked part time or who were students were more likely to consult for mental illness than those employed full-time. Non-smokers were more likely to consult for preventive health care, a possible example of the inverse care law.[37]

The social class differences in consultations for episodes of illness are in the same direction as social class differences in mortality amongst young men.[7] However, the mortality differences are stronger: all-cause mortality rates are two to three times higher among people in social class V than among those in class I/II, and social class differences in accidents and suicides are fivefold and seven to eight-fold respectively.[7] The smaller difference in general practice consultation rates across social class may reflect high levels of unreported morbidity, later presentation, poorer compliance with treatment, or less use of preventive services amongst social classes IV/V compared with social classes I/II.

Implications

This study highlights the importance of a number of social and economic factors on the use made of general practitioner services by young men. Although it is generally acknowledged that general practice workload is influenced by deprivation,[2] the strength of the association between social and economic variables and consultation patterns amongst young men has not previously been described in detail. This study supports others in highlighting the resource, planning and workload implications of deprivation. [12, 19, 38]

Our results clearly show that young men do present to general practice. The provision of preventive care by general practitioners is most effective when directed at groups at greatest risk.[39] However, we found that disadvantaged men who are at greater risk of premature mortality received less preventive health care than advantaged men.

The routine recording of socio-economic data in primary care may facilitate the identification and targeting of those most likely to benefit from help,[40] but our study implies that a range of variables should be recorded to give a complete assessment of the socio-economic determinants of health. Further research is required to investigate possible explanations for the observed variations in use of health services by young men, and determine the extent to which they reflect service delivery factors and/or socially patterned health behavioural factors.

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Key findings

- Mean annual consultation rates per person were 2.21 (95% CI: 2.17 to 2.25) in men aged 16 to 24 years and 2.52 (95% CI: 2.49 to 2.55) in those aged 25-39 years.
- Consulting patterns amongst young men varied according to measures of deprivation as measured by social class, housing tenure and employment status.
- Amongst 25-39 year olds, consultation rates for all illness, for mental illness, and for injury and poisoning were higher in social class IV/V than in class I/II.
- In contrast, consultations for preventive health care were lower amongst men from social class IV/V than in those from social class I/II.

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