

The work hours of GPs: survey of English GPs

Hugh Gravelle and Arne Risa Hole

ABSTRACT

Background

There is no current information about the hours worked by English GPs.

Aim

To compare the reported hours worked by GPs with that of other professions and to explain the variation in GP hours worked and on call.

Design of study

National postal survey of 1871 GPs in February 2004.

Setting

English general practice.

Method

Multiple regression analyses of part-time versus full-time status, hours worked, and hours on call.

Results

Full-time male GPs report more hours worked (49.6; 95% CI [confidence interval] = 48.9 to 50.2) than males in other professional occupations (47.9; 95% CI = 47.6 to 48.1) and male managers (49.1; 95% CI = 48.8 to 49.5). Full-time female GPs report fewer hours (43.2; 95% CI = 42.0 to 44.3) than females in other professional occupations (44.7; 95% CI = 44.4 to 45.0) and female managers (44.1; 95% CI = 43.7 to 44.5). The number of hours worked decreased with practice list size, and increased with the number of patients per GP. GPs work longer hours in practices with older patients and with a higher proportion of patients in nursing homes. Fewer hours are worked in practices with higher 'additional needs' payments. Having children under 18 years of age increased the probability that female GPs work part-time but has no effect on the probability of male GPs working part-time. Given full-time/part-time status, having children under 18 years of age reduces the hours of male and female GPs.

Conclusion

Male English GPs report longer hours worked than other professional groups and managers. The sex differences between GPs in hours worked are mostly attributable to the differential impact of family circumstances, particularly the number of children they have. Perversely, 'additional needs' payments are higher in practices where GPs work fewer hours.

Keywords

family; physicians; workload.

INTRODUCTION

UK government plans for the NHS require a substantial increase in the supply of labour from GPs.¹ Labour supply (that is, the total hours worked by all GPs) is not just a question of numbers of GPs but also of their hours of work, which may be influenced by their characteristics and contractual status. Between 1995 and 2004, while the total number of GPs grew by 15%, the proportion of part-time GPs rose by 12% to 26%.² The proportion of female GPs has increased by 9% to 39% and evidence from other labour markets suggests that females work fewer hours than males, even after allowing for full/part-time status.³

The government policy is to offer salaried contracts to GPs to encourage them to locate in under-doctored areas.⁴ There is some limited evidence that salaried contracts reduce hours worked compared with profit-sharing partners.⁵ There has also been a rapid growth, from 1% in 1998 to 37% in 2004,² in the proportion of GPs in practices that operate under Primary Medical Service (PMS) contracts, which were intended to extend the range of services provided by GPs⁶ and thus, may affect their hours of work.

There is little current evidence on GPs' hours, why they vary for different GPs, and how they compare with other professions. The Department of Health formula for calculating whole time equivalent numbers of GPs from their part/full-time status is based on a 1992–1993 workload survey.² The last large scale study of GP workload was carried out for the Doctors and Dentists Review Body (DDRB) in 1998, but does not report the effects of sex, place of qualification, or part/full-time status on hours. Owing to its low

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response rate (23%) the 1998 survey was not regarded as comparable to the 1992–1993 DDRB survey.⁷

In this study a large recent sample of English GPs was used to estimate GPs' hours and to compare them with those of professional and managerial groups reported in the Labour Force Survey.⁸ GPs' sex, family circumstances, age, ethnicity, and practice characteristics were analysed for their effects on choices between part- and full-time work, hours worked, and their hours on call. Effects of contractual status (PMS and salaried status) on hours worked were tested.

The GP contract relates the pay of GPs to characteristics of their practice populations. The intention is to compensate them for the higher workload believed to be associated with certain types of patients. The characteristics include the age/sex proportions of practice populations, the proportion in nursing homes, and a measure of 'additional needs' based on population morbidity.⁹ It is of interest whether hours worked are actually higher in such practices.

METHOD

A postal questionnaire was sent to a random sample of English GPs in February 2004.^{10,11} GPs were asked:

'How many hours per week do you typically work as a GP? (hours include surgeries, visits, admin).''

and:

'How many hours per week are you typically on call?'

GPs' responses were compared with hours worked per week reported by professional and managerial occupations in the nationally representative Labour Force Survey for March–May 2004.¹² In the Labour Force Survey the responders were asked:

'How many hours per week do you usually work in your (main) job/business (please exclude meal breaks)?'

The GP questionnaire asked about a range of personal characteristics. Additional variables, including part-time status, were linked to the database of GPs from the National Primary Care Research and Development Centre (NPCRDC).¹³ The analyses include measures of the practice population age/sex composition, the proportion of patients in nursing homes, and additional needs (based on standardised long-term limiting illness and standardised mortality ratio for ages up to 65 years). These measures are used to adjust payments to practices to compensate for greater workload.⁸

How this fits in

There is no recent evidence on hours worked by different types of GPs in different types of practices or how GPs compare with other professionals. This study shows that male GPs work slightly longer than males in managerial and other professional occupations. Female GPs work 11.8 hours less per week than male GPs and 3 hours less than females in managerial and other professional occupations. GPs in practices with higher additional needs payments work fewer hours.

The determinants of GPs' choice between part and full-time status were analysed with probit regression. The effect of a one unit change in the variable on the probability of an average GP being part-time was reported. Details of the calculations are shown in Supplementary Appendix 1. The determinants of hours of work and on-call hours, given part/full-time status, were examined with linear multiple regressions, which included an indicator variable for part-time/full-time status. Pooled regression models were estimated for males and females allowing for the possibility that some variables had different effects on males and females by interacting them with a female indicator variable.

Reported results are from separate estimations of the three regression models. They are very similar to those from simultaneous estimation, which allows for the possibility that there are unobserved factors that influence the choice of part/full-time status and the hours worked or on call given part/full-time status. Selection correction variables included in the hours and on-call regressions were insignificant ($P = 0.44$ and $P = 0.28$).

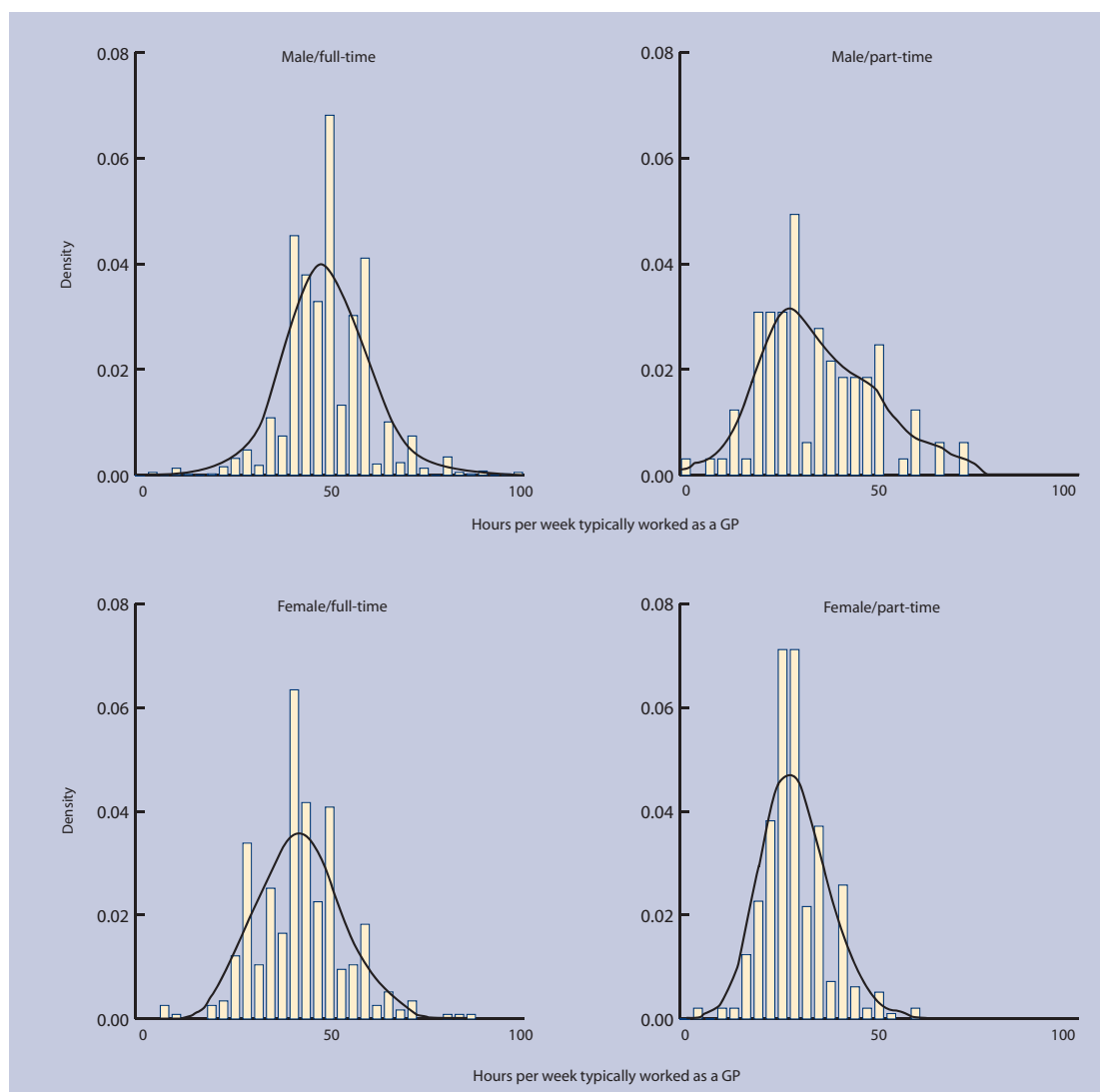
In addition to calculating the mean hours of male and female GPs full-time work, mean hours were also estimated using the coefficients from a regression of hours on GP characteristics and the national population mean of the characteristics.

RESULTS

The questionnaire was posted to 4208 salaried and principal GPs in England, of whom 2166 (51.5%) responded. Response rates for the 1992–1993 and 1997 DDRB workload surveys were 52% and 23%, respectively.^{7,14} The GP sample has broadly similar characteristics to the GP population² in terms of sex (34% female versus 38% in the GP population), part-time status (7% male part-time versus 11%, 46% part-time female versus 49%), PMS (33% versus 37%), and working in a dispensing practice (19% versus 16%).

Figure 1 and Table 1 standard deviations show considerable variation in the reported hours worked by GPs, even after allowing for part/full-time status. Part-time GPs work 17.8 hours per week (95% CI

Figure 1. Distribution of GP hours worked per week by sex and full- and part-time status.



[confidence interval] = 16.7 to 18.9) less than full-time GPs and spend 6.7 fewer hours on call (95% CI = 5.6 to 7.7). Full-time female GPs work 6.4 (95% CI = 5.1 to 7.7) hours less than full-time male GPs and part-time female GPs work 4.9 hours less than part-time male GPs (95% CI = 2.1 to 7.7). They also spend 2.2 fewer hours a week on call if full-time (95% CI = 0.6 to 3.8). Reported hours worked and on call have a positive but small Pearson correlation: 0.21, ($P < 0.001$) for full-time and 0.27 ($P < 0.001$) for part-time work. As Figure 1 shows, some part-time GPs work more hours than full-timers, possibly because some GPs who are recorded as working part-time in their practice also do other work as GPs.

Table 2 shows that among full-time workers male GPs work longer hours (49.6; 95% CI = 48.9 to 50.2) than males in other professional occupations (47.9; 95% CI = 47.6 to 48.1) and male managers (49.1; 95% CI = 48.8 to 49.5), whereas female GPs work shorter hours (43.2; 95% CI = 42.0 to 44.3) than females in other professional occupations (44.7; 95% CI = 44.4

to 45.0) and female managers (44.1; 95% CI = 43.7 to 44.5).

The probit regression of the determinants of GPs' choice between part and full-time status showed that the probability of part-time working increases with the experience of the GP (which is highly correlated with age). Full results from the regression analyses are shown in Supplementary Tables 1–2.

The probability of working part-time is 0.07 (95% CI = 0.024 to 0.149) lower for non-white GPs and 0.08 (95% CI = 0.039 to 0.115) lower for non-UK qualified GPs. The probability of a female GP working part-time increases with the number of children aged under 18 years, while there is no such effect for male GPs. For example, compared with having no children, having one child increases the probability of part-time working for female GPs by 0.20 (95% CI = 0.065 to 0.333); and for otherwise identical male GPs, reduces it by 0.01 (95% CI = -0.026 to 0.042). After allowing for all personal and practice characteristics, female GPs have an

unexplained 0.27 (95% CI = 0.195 to 0.354) higher probability of being part-time than male GPs.

The multiple regression analysis of hours worked shows that part-time GPs work 13.5 (95% CI = 12.1 to 14.9) hours less than full-timers, holding other factors constant. Hours worked decline with total list size: a 10% increase in total list size reduces hours per week by 0.18 (95% CI = 0.09 to 0.28). However, a 10% increase in list size per GP increases weekly hours worked by 0.54 (95% CI = 0.29 to 0.79). Hours increase with the age/sex and nursing home contractual payment adjustment factor, but decline with the additional needs contractual payment adjustment factor.

Hours of work increase with experience as a GP, until 17 years of work when hours decline. Hours worked decline with the number of children under 18 years of age. Family circumstances (working status of spouse, number of children) have differential effects on male and female GPs ($F = 2.11$, $P = 0.05$). In particular, the negative effect of children on hours is about twice as large for female GPs as for males. Once the differential effects of family circumstances are allowed for, sex has no significant direct effect on hours worked, given part- or full-time status.

From Table 1 the difference in male and female GP hours worked is 11.8 hours. Using the results from the hours regression, 5.3 hours (45%) of the difference is due to the greater proportion of male GPs who work full-time: 5.4 hours (46%) is due to female GPs reducing their hours more than male GPs with the same family circumstances; and the remaining 1.1 hours (9%) difference is due to differences in the average personal and practice characteristics of male and female GPs.

Non-UK qualified GPs spend 3.9 (95% CI = 1.4 to 6.4) hours more on call than UK qualified GPs, whereas their hours worked are no different. None of the contractual payment adjustments for workload have a significant effect on hours on call. Having children reduces the hours on call of both male and female GPs but the effect on female GPs is smaller. Being female has no direct effect on hours on call, and the interactions of the female indicator with family circumstance variables are jointly insignificant. The introduction of the new General Medical Services contract in April 2004 enabled GPs to opt out of providing out of hours care.

DISCUSSION

Summary of main findings

Male GPs work 2 hours a week more than other male professionals and 20 minutes per week longer than male managers. Female GPs work around 1.5 hours a week less than females in managerial and other professions.

Table 1. Sample characteristics of practices and GPs.

	Male GPs		Female GPs		<i>t</i> or χ^2
	Mean or proportion	SD	Mean or proportion	SD	
Part-time contract	0.069		0.462		392.237 ^a
Hours worked per week if full-time	49.547	10.312	43.163	10.986	9.427 ^a
Hours worked per week if part-time	34.083	12.441	29.165	7.784	3.430 ^a
Hours on call per week ^c if full-time	14.863	14.149	12.688	12.136	2.660 ^a
Hours on call per week ^c if part-time	8.163	7.679	7.599	6.998	0.587
Decades of experience	2.299	0.699	2.007	0.705	8.420 ^a
Non-white	0.162		0.117		6.580 ^b
Non-UK qualified	0.124		0.089		4.939 ^b
No partner	0.043		0.102		574.326 ^{a,d}
Partner does not work	0.231		0.065		
Partner works part-time	0.508		0.086		
Partner works full-time	0.218		0.746		
Number of children under 18 years					
0	0.328		0.325		6.659 ^e
1	0.159		0.138		
2	0.296		0.350		
≥3	0.217		0.187		
Salaried	0.030		0.020		1.630
Proportion of female GPs in practice	0.304	0.190	0.503	0.195	-20.786 ^a
Practice list size ('000s)	8.924	4.416	8.634	4.120	1.387
Practice list size per WTE GP ('000s)	2.028	0.488	1.969	0.474	2.493 ^b
Age/sex adjustment	22.410	0.918	22.272	0.924	3.021 ^a
Nursing home adjustment	25.008	24.225	15.213	15.581	10.458 ^a
Additional needs adjustment	96.720	10.997	96.670	10.960	0.092
Dispensing practice	0.194		0.169		1.685
PMS practice	0.340		0.322		0.575
<i>n</i>	1216		615		

^a $P < 0.01$. ^b $P < 0.05$. ^cBased on 1132, 331, 84, and 284 respondents for male full-time, female full-time, male part-time, and female part-time GPs. ^d χ^2 for difference in partner type distributions. ^e χ^2 for differences in distribution of number of children. SD = standard deviation. WTE = whole time equivalent.

Table 2. Reported hours worked: comparison between GPs and workers in other professional occupations and managers, Spring 2004. Full-time workers.

	Males			Females			Difference of means by sex	<i>t</i>
	Mean	SD	<i>n</i>	Mean	SD	<i>n</i>		
GPs	49.55	10.31	1132	43.16	10.99	331	6.38	(9.43)
All other professions	47.87	12.32	8740	44.67	10.63	4350	3.21	(15.41)
Managers	49.12	12.39	5327	44.09	10.52	2330	5.03	(18.19)
GPs versus all other professions	1.67			-1.50			3.18	
<i>t</i>	(5.01)			(-2.41)			(4.48)	
GPs versus managers	0.43			-0.93			1.36	
<i>t</i>	(1.22)			(-1.45)			(1.86)	

Female GPs work 11 fewer hours than male GPs mainly because the hours of female GPs with children are reduced more than those of male GPs with children. Once their children are over 18 years of age, female GPs work as many hours as males.

GPs in practices with fewer patients per GP and in practices with higher additional needs payments report fewer hours worked.

Strengths and limitations of the study

Previous studies for the DDRB estimated weekly GP hours at 38.8 in 1992–1993¹⁵ and 39 in 1998.⁷ This study's estimates (44.5 hours) are considerably higher. But this does not imply that GPs hours have increased. The earlier studies used workload diaries^{7,13} which are thought to be more reliable.¹⁶ Questionnaires generally produce higher estimates of hours worked than workload diaries for those reporting high hours and lower estimates for those reporting low hours.¹⁷ Therefore, these results are not directly comparable with the DDRB estimates. However, this study's estimates of hours worked are comparable with the questionnaire-based estimates of hours worked in other professional and managerial occupations from the Labour Force Survey.¹¹

Implications for future policy and research

This study has a number of implications for policy and research. First, the finding that GPs in practices with smaller lists per GP worked fewer hours suggests that increases in the number of GPs will lead to a less than pro-rata increase in GP hours. A 10% increase in the number of GPs will, holding the number of patients constant, lead to an 8.8% increase in GP hours. Second, the age/sex and nursing home contractual payment adjustments for workload are indeed positively associated with longer hours. But the additional needs adjustment for workload is perversely negatively associated with hours, suggesting that this element of the contract requires further investigation. Third, the trend to PMS practices seems unlikely to have had any implications for total hours worked by GPs, as there is no significant effect of PMS contract status on hours worked. Fourth, the 11 hours per week gap between male and female GPs hours is mainly due to the differential impact of children on male and female GPs. Research on the reasons for this differential impact could provide information on whether policies directed at child care and practice working arrangements are likely to be an effective means of increasing GP labour supply. This is a particularly important issue as the share of female GPs is likely to increase over the coming years.

Supplementary information

Additional information accompanies this paper at: <http://www.rcgp.org.uk/bjgp-supinfo>

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Ethics committee

Not applicable

Competing interests

The authors have stated that there are none

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