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What keeps family physicians busy in Portugal? A multicentre observational study of work other than direct patient contacts

Mónica Granja,[1] Carla Ponte,[2] Luís Filipe Cavadas[3]

[1]S. Mamede de Infesta Health Centre, Matosinhos Local Health Unit, Matosinhos, Portugal
[2]Porta do Sol Family Health Unit, Matosinhos Local Health Unit, Matosinhos, Portugal
[3]Lagoa Family Health Unit, Matosinhos Local Health Unit, Matosinhos, Portugal

Correspondence to
Dr Mónica Granja;
monica.granja@ulsm.min-saude.pt

ABSTRACT

Objectives: To quantify the time spent by family physicians (FP) on tasks other than direct patient contact, to evaluate job satisfaction, to analyse the association between time spent on tasks and physician characteristics, the association between the number of tasks performed and physician characteristics and the association between time spent on tasks and job satisfaction.

Design: Cross-sectional, using time-and-motion techniques. Two workdays were documented by direct observation. A significance level of 0.05 was adopted.

Setting: Multicentric in 104 Portuguese family practices.

Participants: A convenience sample of FP, with lists of over 1000 patients, teaching senior medical students and first-year family medicine residents in 2012, was obtained. Of the 217 FP invited to participate, 155 completed the study.

Main outcomes measured: Time spent on tasks other than direct patient contact and on the performance of more than one task simultaneously, the number of direct patient contacts in the office, the number of indirect patient contacts, job satisfaction, demographic and professional characteristics associated with time spent on tasks and the number of different tasks performed, and the association between time spent on tasks and job satisfaction.

Results: FP (n=155) spent a mean of 143.6 min/day (95% CI 135.2 to 152.0) performing tasks such as prescription refills, teaching, meetings, management and communication with other professionals (33.4% of their workload). FP with larger patient lists spent less time on these tasks (p=0.002). Older FP (p=0.021) and those with larger lists (p=0.011) performed fewer tasks. The mean job satisfaction score was 3.5 (out of 5). No association was found between job satisfaction and time spent on tasks.

Conclusions: FP spent one-third of their workday in coordinating care, teaching and managing. Time devoted to these tasks decreases with increasing list size and physician age.

Strengths and limitations of this study

- This is the first national study of tasks other than direct patient contact by family physicians.
- Participating physicians are representative of Portuguese family physicians (FP) in terms of age and geographic location.
- Only 10 (4.7%) FP refused to participate.
- The use of direct observation by external observers yields more accurate data than self-reporting or other methods.
- Participation was not random and the sample size was smaller than desirable due to the difficulty in recruiting students and residents for data collection.
- This study included only those FP involved in teaching students and residents
- Data collection by multiple observers can introduce inter-observer bias.

INTRODUCTION

The content of Family Medicine/General Practice (FM/GP) in Portugal has changed since the creation of the specialty 30 years ago. The National Health System (NHS) has set new priorities, the population is ageing, there is greater complexity of care, medical school and FM/GP residency enrolment has increased, and new technologies are available. The tasks family physicians (FP) must perform extend beyond direct patient contact in the office. These include maintaining electronic clinical records, referrals, prescription refills, follow-up of diagnostic tests, telephone calls and e-mail with patients and families,[1–5] collaboration with other professionals, performance analysis, practice management, teaching and research.[6] [7] Many of these tasks optimise the time spent in office visits, maximise patient access and continuity of care, and often improve coordination of care, which are core attributes of FM/GP.[8] [9] They also promote the development of FM/GP as a scientific discipline. Other tasks arise from bureaucratic demands of the healthcare system.

Characterising the work of the FP other than direct patient contact is important because of the 'invisibility' of this work. Lack of protected time for these activities may result in increased physician stress and decreasing motivation to perform them. The difficulty in recording some of these tasks may not only have effects on continuity of care but may also have a medico-legal fallout.

The first Portuguese study on this subject was published in 2011. Indirect patient care tasks comprised a mean of 2 h (23%) of the FP workday in the Matosinhos Local Health Unit.[10] This study included only a small sample of doctors in one district. Data were collected by self-report in real time by participating FP, which did not allow for the quantification of time spent on each specific task.

Studies conducted in the USA[11–17] found that medical tasks in addition to direct patient contact account for an important part of the workload in primary care.

Portuguese primary healthcare provides universal access to patients in the NHS. FP complete a 4-year specialty-training programme. They act as gatekeepers for secondary and hospital care. Most general practices have 5–10 FP working in a group and most doctors care for a list of 1500–1900 patients. The FP/nurse ratio averages 1:1, the FP/clerical staff ratio averages 2:1 and there is limited access to social workers, nutritionists and psychologists. FP are responsible for family planning, follow-up of child development, surveillance of low risk pregnancies, chronic disease management and care of the elderly. In-hospital work is not part of the task of Portuguese FP. The use of electronic prescription software and electronic medical records are mandatory in the NHS. More than 90% of general practices use the same software while hardware, bandwidth and browsing speed are highly variable across practices. In classic general practices, called Personalised Health Care Units, professionals are allocated by the Ministry of Health and paid a fixed salary. A recent development as a result of primary healthcare reform has been the development of Family Health Units (FHU). FHU are formed by a voluntary association of physicians, evaluated with a set of performance indicators (determined by the Ministry of Health) and paid a salary based on capitation, with a mix of fee-for-service and pay-for-performance bonuses.

The objectives of this study were to determine, for FP working in Portugal:

▶ The time spent performing tasks other than direct patient contact
▶ The time spent on each task other than direct patient contact and on performance of simultaneous tasks
▶ The total number of different tasks performed
▶ The number of daily patient contacts and of non face-to-face contacts recorded
▶ Job satisfaction
▶ The association between physician characteristics and the time spent on tasks other than direct patient contact, the number of different tasks performed and the time spent performing simultaneous tasks
▶ The association between time spent on tasks and job satisfaction.

METHODS

A descriptive cross-sectional study, with an analytic component, was conducted in 2012. The participants were FP working in Portuguese family practices. Physicians with a patient list size of less than 1000 patients were excluded. Data were collected by medical students and residents who served as external observers. A convenience sample was obtained including FP who tutored medical students in the first semester 2012. As the recruitment was smaller than expected, by June 2012, data collection was extended until 31 December 2012, and first-year family medicine residents and their tutors were also invited to participate.

This was a non-random sample. The sample size was set at 620 participants based on the total number of medical students in the last 2 years of the eight Portuguese medical schools who would rotate in family practices in the first semester of 2012. No published studies were found referring to recruitment ratios of medical students as research observers.

The FM/GP departments of the eight Portuguese medical schools and the coordinators of five Portuguese FM/GP regional residency programmes were approached and asked to help recruit medical students and residents as voluntary observers. Medical schools and residency programmes were asked to provide a list of those FP chosen as tutors for their students and residents. The names and workplace only were provided and no additional data on potential participants were available. FP teaching medical students and residents willing to collaborate were contacted by researchers by phone or e-mail or by the medical students and residents themselves. FP willing to participate received the study protocol and provided written informed consent.

Each FP chose two working days for the study, preferably consecutive days with at least 14 working hours in practice.

Using time-and-motion techniques,[18 19] medical students and residents acting as observers shadowed their tutors and collected data on the tasks they performed other than direct patient contact and recorded the time they spent on each task. Researchers prepared a data collection grid based on previous studies[11 12] and adapted after experience gained in an exploratory study.[10] Observers recorded the start and end time of each task in real time, rounding times to the nearest minute, using a digital clock. Where two or more tasks were performed simultaneously, they were both recorded including the start and end time of each task. The number of direct patient contacts, non face-to-face contacts, demographic and professional characteristics of physicians and ratings of how typical the workday was were also recorded.

If a portion of the FP workday was not observed or registered, it was coded as 'lost data'. Data sets with losses longer than half the total time under observation were excluded. If, owing to the educational requirements of the observers, an entire half-day was lost for

observation, the remaining period was considered the day under observation and data were included accordingly. One minute was counted for tasks starting and ending in the same minute and for tasks whose duration could not be established (usually for lack of an end time). Time spent performing tasks of different categories recorded together was allocated in equal parts.

Data collection forms were returned by mail or hand delivered to the observers' schools. When data were delivered with potentially retrievable missing data (such as demographic data, numbers of patient contacts or job satisfaction scores), the observer or the FP were contacted to complete them.

Time variables were counted in minutes, including the time allocated to tasks and to personal activities directly recorded by the observer, and with time for direct patient contact indirectly estimated. The observer classified tasks other than direct patient contacts using a taxonomy developed by the researchers (see online supplementary appendix I). In cases of doubt, tasks were described verbally and subsequently classified by researchers. The numbers of direct patient contacts in office visits and non face-to-face contacts recorded in the medical record on each study day were provided by FP based on their electronic records. The typical nature of each workday was evaluated subjectively by the FP using a Likert scale (1 being 'completely atypical' and 5 'completely typical'). FP job satisfaction was assessed by the self-administered 'Quality pentagon job satisfaction questionnaire' of Biscaia (used with permission).[20][21]

Collected data were anonymised and entered in Microsoft Excel and analysed using STATA 10.1 software. Frequencies, means, medians, SD and CIs were calculated. The Student's t test was used to compare the means of two independent variables and ANOVA was used for more than two variables. A hierarchical regression model was built to study the association between two interval variables, considering the time of data collection.

Observer bias was minimised using debriefing sessions for students participating in data collection, a portable paper script standardising procedures and task categorisation provided to each collaborator, supervision of students and residents in real time, and selection of workdays observed in the middle of students' rotation to minimise the Hawthorne effect. Each data set was read and codified separately twice. One researcher (CP or LC) codified each data set once. The senior researcher (MG) read and codified all data sets, to assure homogeneity.

No identifying or clinical data were collected on patients for this study. Students and residents attended only the clinic sessions they would normally attend during their rotation or residency. Each FP provided informed consent for participation in the study and all were guaranteed confidentiality of personal data, data anonymisation and the non-disclosure of any individual or practice results. The study was funded by a grant from the Ministry of Health. Two independent primary care ethical review boards approved the study protocol.

RESULTS

All FM/GP regional residency programme coordinators and seven of eight medical schools cooperated in recruiting student observers for the study. A total of 1321 potential observers were approached, including 890 medical students in the final 2 years of medical school and 431 first-year FM/GP residents. Data were collected by 135 students and 18 residents (153 observers) from 155 FP. Two residents collected data from two FP each.

In total, 217 FP were invited to participate in the study requiring direct observation of two workdays. Ten doctors (4.6%) refused to participate. Six doctors were observed but their data were excluded from the analysis (table 1). Data from 46 FP were not received. For 39 of these, the reason for the missing data was not determined as the student observers were not reachable for an explanation.

In the final study sample of 155 FP, 70.3% (109) were women. Data on participants' age, years of practice as an FP and list size are given in table 2. Data on age and years of practice were missing for five participants and data on list size were missing for four participants.

Most participating FP worked in practices in two regions: Lisbon and the Tagus Valley Region (38.7%) and the Northern Region (38.7%) (table 3). The majority worked in FHU, were salaried employees, with the collective public service contract working 42 h/week (table 3).

Participating FP worked in 104 different practices in 14 of the 18 districts in the Portuguese mainland and from one of two island regions. Porto, Lisbon, Setúbal, Braga and Coimbra were the districts with the greatest representation (figure 1).

Table 1 Recruitment of family physicians as participants in the study

Participating physicians	n	%
Invited	217	
Refused	10	4.6
Excluded	6	1.1
Had not completed training	2	
Patient list<1000 patients	2	
>50% data loss	2	
Undelivered	46	21.2
Observer withdrew	4	
Tutor illness	1	
No fixed tutor	1	
Data collection form lost	1	
Unknown cause	39	
Delivered data	155	71.4

Table 2 Demographic and professional characteristics of FP

	n	Mean	Median	Minimum	Maximum	SD
Age	150	48.8	54.0	26	62	10.18
Years as FP	150	19.0	24.5	1	32	10.66
Patient list size	151	1771.4	1773.0	1090	2300	189.90

FP, family physicians.

Data were not available on demographic or professional characteristics of FP who refused to participate, or whose data were not delivered (table 1).

Medical activities were recorded for a total of 310 workdays. The 2 days studied for each FP were successive weekdays in 68.4% of cases. The median score for 'typicality' of the workday was 4 on a scale of 1 to 5 (n=293 days, first quartile=1 and third quartile=5).

The mean length of the FP workday (time between arriving at work and leaving the practice) exceeded 8 h. An average of 430.1 min/day was spent on effective work, with 278.2 min allocated to face-to-face direct patient contacts (excluding any interruptions to perform other activities) and 143.6 min to perform tasks other than direct patient contact (table 4). Doctors saw a mean of 19.1 patients/day and spent 15.9 min/patient.

A mean of 8.3 min/day were spent on house calls and other external work. A daily mean of 57.6 min was spent on personal activities (snacks, hygiene, socialising, personal calls). The observers were unable to observe a mean of 11.0 min/day. Tasks other than direct patient contact represented 33.4% of the effective working time observed (table 5).

A mean of 10.8 (±3.40) different tasks was performed daily (minimum 2, maximum 24). The performance of more than one task simultaneously was observed during 3.7 min/day (2.6% of the total time spent with the tasks).

On average, non-contact time spent daily on tasks directly related to patients (73.0 min) was similar to non-contact time spent with tasks unrelated to patients (74.3 min). The non-contact tasks that accounted for most of the FP workday were prescription refills, student and resident teaching, practice meetings, practice management, administrative or clinical communication with other professionals and work preparation (table 6). Other non-contact tasks were related to laboratory, imaging and other tests, visits from pharmaceutical representatives, phone calls to and from patients, referrals and attention to computer malfunctions. The least amount of time was spent on e-mails to and from patients, research, case study and performance monitoring.

Tasks most often performed simultaneously overlap the most common tasks performed.

A mean of 25 contacts/day were recorded in the electronic medical record. These included 19 direct patient contacts in the office and 6 non face-to-face contacts. Data on the number of direct and indirect contacts recorded were missing in 26 and 46 of the 310 days studied, respectively.
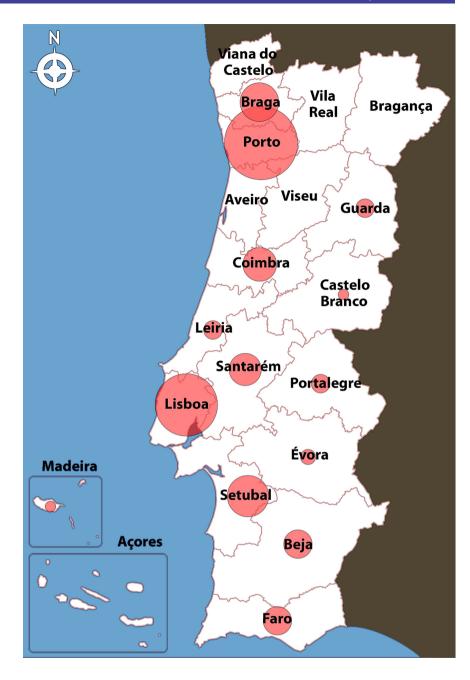
Global job satisfaction scores averaged 3.5 on a scale from 1 (minimal satisfaction) to 5 (maximal satisfaction). The dimension 'pressure and demands at work' accounted for the lowest satisfaction score (2.5) and 'interpersonal relations and autonomy' accounted for the highest score (4.2) (table 7).

No association was found between time spent on tasks and physician gender, age, years of practice, geographic location, practice type, contract type or weekly schedule (tables 8 and 9).

A negative association was found between time spent with tasks and patient list size. As the number of patients increases, the time spent on tasks decreases (minus 4.2 s for each increase of one patient—table 9).

No differences were found in the number of different tasks performed by gender, geographic location, practice type, contract type or weekly workload (table 8). Negative associations were found between the number

Table 3 Professional features of participating family physicians (n=155)

	N	%
Region		
Lisbon and Tagus Valley	60	38.7
North	60	38.7
Centre	14	9.0
Alentejo	13	8.4
Algarve	7	4.5
Madeira	1	0.6
Practice type		
Family Health Unit	114	73.6
Personalised Health Care Unit	41	26.4
Contract type		
Collective public contract	133	85.8
Individual public contract	13	8.4
Unknown	9	5.8
Weekly schedule (contract hours)		
42 h	83	53.6
40 h	47	30.3
35 h	17	11.0
Other	2	1.3
Unknown	6	3.9

Figure 1 Distribution of participating family physicians by region.

of different tasks performed and age, years of practice as an FP and patient list size. The number of different tasks performed decreases with increasing age, years of practice and list size (table 9). There were no associations found between these variables and time spent with more than one task simultaneously. No association was found between time spent with tasks and job satisfaction (table 9).

DISCUSSION

In this study of the workload of family doctors in Portugal, 155 FP spent a mean of 2 h and 20 min/day (33.4% of their workday) performing tasks other than direct patient contact such as refilling prescriptions, teaching, attending meetings, managing the practice

and communicating with other professionals about patients. Half of this time was spent on tasks which, although not face-to-face contacts, were related to specific patients. FP with larger patient lists spent significantly less time with these tasks. Older FP, with more seniority and larger lists, performed a significantly smaller range of tasks. Job satisfaction was not associated with time spent on non-patient contact tasks.

The main limitation of this study is the small sample size and the non-random sample. The 155 doctors participating on this study represent 2.8% of the 5503 FP working in public primary care in Portugal.[22] The small sample size was due to the difficulty in recruiting students and residents for data collection. The refusal rate for doctors was only 4.7%. We do not know the reasons for the 39 data sets (19.8%) never delivered by

Table 4 Mean time spent (minutes) on daily activities by family physicians (n=310)

Task	Mean	95% CI	Minimum	Maximum	SD
Tasks other than direct contact	143.6	135.2 to 152.0	17	469	75.58
Related to patients	73.0	68.0 to 77.9	1	243	44.59
Unrelated to patients	74.3	67.2 to 81.3	0	364	63.37
Direct patient contacts	278.2	267.1 to 289.4	47	622	100.25
Time per visit* (n=243)†	15.9	15.2 to 16.7	3.7	47.9	6.08
House calls/other external work	8.3	5.5 to 11.1	0	132	25.24
Effective daily working time‡	430.1	416.5 to 443.7	124	722	122.22
Personal time	57.6	52.3 to 62.9	0	289	47.38

*Not including interruptions.
†Indirectly calculated, excluding days with over 30 min of data loss (n=21) or with an unknown number of office visits (n=46).
‡Effective work = tasks other than patient contact + office visits + house calls/other external services.

the student observers. This may have been due to non-explicit refusal to participate or to professional dissatisfaction.

In spite of sampling limitations, this is the first multi-centric study of FP workload in Portugal with participants from all health regions in Continental Portugal. It used external observers which may provide more accurate data than that obtained by self-report.[18] [19]

Our sample appears to be representative of Portuguese family medicine by age and location. The median age of participants was 54 years. In Portugal, 61.1% of FP are between 50 and 59 years of age.[22] In our study, most of the participating FP work in the Northern Region and in the Lisbon and Tagus Valley Health Region, the most populous regions of the country with the most FP.[22]

The inclusion of doctors involved in student and resident teaching may introduce another bias. They may have a wider task profile than non-academic colleagues. Also, data collection by multiple observers may introduce inter-observer bias, though this is inherent in studies using external observation of large samples of FP.

The mean time spent on tasks other than direct patient contact (over 11 h a week) is similar to the maximum protected time ever allocated in a contract to perform these tasks. Twelve hours per week were formerly allocated to some FP residency trainers with a 42-hour (per week) contract. Today, many FP have much less or no protected time. The figure of 33.4% of time devoted to non-patient contact tasks is higher than the finding in the previous study (23%).[10] The differences may be due to different methods of data collection,[18] [19] changes in practice between 2010 and 2012 following reforms in Portuguese primary care or local conditions differing from findings in a national study.

Other studies using medical students for direct observation found similar proportions of time spent on non-patient contact tasks, ranging from 29.1% in one study of 11 FP[11] to 39% in another study of 27 FP.[12] Differences in the context of these studies may account for differences in the results.[23] In Gilchrist's study, personal time and tasks relating to patients currently being seen in practice were included as non-patient contact tasks.[12] Other published studies on this topic in primary care settings are more difficult to compare with our study, since they included primary care physicians other than family physicians such as internists and geriatricians.[13–16]

Studies performed in the USA found that more time was spent on tasks such as maintaining clinical records and on phone calls and e-mails to and from patients and their families.[11–13] [15] [17] This may be explained by different systems of remuneration (eg, fee for service), depending on the medical acts recorded, by better facilities for telephone and e-mail contacts, and by a better non-medical to medical staff ratio. Student teaching may be over-represented in our study because of the sampling method chosen using student observers.

Half of the time spent on non-patient contact tasks was allocated to tasks that are directly related to patient care. This may ensure accessibility, continuity and coordination of care.[8] [9]

Table 5 Distribution of activities in the workday

	Mean (minutes)	% workday*	% effective workday†
Workday*	498.7		
Personal time	57.6	11.6	
Missing data	11.0	2.2	
Effective working time	430.1	86.2	
Direct patient contacts	278.2		64.7
Tasks other than direct patient contact	143.6		33.4
House calls/other external work	8.3		1.9

*Workday = time between entering and exiting practice.
†Effective workday = tasks other than direct contact + office visits + house calls/other external work.

Table 6 Time spent (in minutes) on tasks other than direct patient contact

Task type	Mean	Max	Min	SD	n
Prescription refills	17.6	82	0	17.94	145
Student and resident teaching	15.5	236	0	25.44	124
Practice meetings	12.8	225	0	35.38	49
Practice management	9.6	274	0	27.36	106
Administrative communication about patients	8.6	54	0	9.32	144
Work preparation	8.2	38	0	6.61	150
Clinical communication between professionals about patients	7.8	62	0	9.89	133
Laboratory, imaging and other tests	7.4	75	0	11.80	121
Pharmaceutical representatives	7.3	122	0	15.30	88
Phone calls to and from patients	6.3	50	0	8.20	131
Referrals	6.2	113	0	14.03	94
Computer system malfunctions	5.7	155	0	15.38	80
Clinical records	4.8	57	0	10.06	87
Reports and certificates	4.4	60	0	8.36	97
Continuing medical education	4.0	95	0	15.51	26
Searches for clinical information	3.1	51	0	6.89	82
Work phone calls unrelated to specific patients	2.9	43	0	5.57	108
'Corridor' conversations with patients/caregivers	2.9	41	0	5.97	86
Work e-mails unrelated to specific patients	2.4	45	0	5.83	66
Performance monitoring	1.9	76	0	6.67	42
Restoring or replacing office supplies	1.8	59	0	5.44	66
Case study, searching medical databases	1.6	40	0	4.54	56
Others—related to specific patients	1.5	54	0	5.54	52
Research	1.1	44	0	4.98	22
E-mails to and from patients	0.8	18	0	2.85	30
Helping colleagues	0.7	26	0	2.70	35
Others—unrelated to specific patients	0.4	18	0	1.80	27

n, number of family physicians who performed the task.

This population appears to spend little time on research. None of the previously published studies assessed time spent on clinical research. Research is essential to the development of family medicine as an academic and scientific discipline. In Portugal, many barriers to primary care research have been identified. Patient care is the priority and protected time for research is rare.[24–27]

Table 7 Job satisfaction of participating family physicians (n=150)

Job satisfaction dimension	Mean	Maximum	Minimum	SD
Pressure and demands at work	2.5	4.6	1.0	0.68
Practice conditions	3.7	5.0	1.0	0.86
Job interest	4.0	5.0	2.5	0.49
Adequacy for work	4.1	5.0	3.0	0.42
Reward for the work done	3.1	4.7	1.0	0.73
Interpersonal relations and autonomy	4.2	5.0	2.3	0.61
Global	3.5	4.6	2.3	0.37

Communication with patients and their caregivers by electronic mail was rarely observed (less than 1 min/day), despite satisfaction with this means of contact among physicians and patients.[28–30] Increased value for this medium in performance assessments may encourage its use.[31–34]

Interaction with pharmaceutical industry representatives occupied 7.8 min a day. In one Portuguese study, 82.7% of the FP stated that they used the pharmaceutical industry as a source of medical information.[35] Information from pharmaceutical representatives may result in more prescriptions, use of more expensive drugs and prescription of lower quality.[36] This finding suggests a need for reflection on these interactions occurring during working hours.[37]

Time spent on computer failures accounted for 5.7 min daily. This has not yet been studied in Portugal. Since clinical records, prescriptions, test ordering, referrals and certificates are all exclusively electronic, this problem is frequently cited as a source of physician dissatisfaction.[38]

Physicians saw a mean of 19 patients/day, similar to other studies.[11 12] However, those studies did not include indirect contacts such as prescription refills which averaged 6 per FP per day in our study, for a total of 25 patient-related contacts recorded per FP per day.

Office visits lasted a mean of 15.9 min/patient in this study, similar to findings in other US studies of FP[11 12]

Table 8 Analysis of the association between time spent on tasks other than direct patient contact and of the total number of different tasks performed by demographic and professional characteristics of family physicians

	Time with tasks			Number of different tasks		
	Mean (minutes)	SD	p Value*	Mean	SD	p Value*
Sex						
Female	144.8	78.26	0.6676	10.67	3.656	0.3302
Male	140.7	69.16		11.09	2.708	
Practice type						
Personalised Health Care Unit	144.1	77.15	0.9402	10.74	3.243	0.8700
Family Health Unit	143.4	75.18		10.82	3.466	
Contract type						
Individual public	150.0	81.70	0.7426	10.42	3.921	0.5404
Collective public	144.8	76.27		10.85	3.332	
	Mean (minutes)	SD	p Value†	Mean	SD	p Value†
Region						
Alentejo	139.2	72.87	0.7579	10.89	2.487	0.3131
Algarve	126.4	77.37		8.93	3.316	
Centre	147.4	73.99		10.57	3.382	
LTV and Madeira	149.3	76.15		10.98	3.825	
North	139.8	76.40		10.86	3.104	
Weekly schedule (contract hours)						
35	138.2	69.42	0.7544	10.82	3.730	0.9783
40	145.0	75.79		11.09	3.297	
41	140.5	59.05		11.00	2.944	
42	149.0	80.48		10.82	3.235	

*Student's t test.
†ANOVA.
LTV, Lisbon and Tagus Valley.

and primary care internists[14] and similar to findings in a previous Portuguese study (14 min).[39] This probably underestimated the true value. The method used to determine time spent per office visit excluded interruptions to perform tasks not related to that specific visit. Furthermore, although FP were asked not to choose work days with residents working autonomously and seeing patients for them, it was found that this did

happen. It is possible that some of the office visits performed by a resident have been recorded as under the FP's name. Finally, lost data were excluded from the total time spent at work while the number of office visits was taken from the electronic medical record.

Job satisfaction scores recorded here (3.5 of 5) were higher than those recorded (3.0) in a study conducted in the Lisbon Region in 2000.[21] Organisational changes that have occurred in Portuguese primary care in the past 12 years may have increased satisfaction. In both studies, the dimension yielding the lowest score was 'pressure and demands at work'. The highest score was obtained in both for 'interpersonal relations and autonomy' and 'adequacy for the job'.[21] A US study that assessed FP job satisfaction found an average score of 3.7 among primary care internists but carried out no further analysis.[15]

In our study, no association was found between job satisfaction and the time spent performing tasks. More time spent on tasks might decrease job satisfaction, since previous studies show lower job satisfaction to be associated with more time spent on administrative tasks.[40] However, only half the total time for non-patient contact tasks was allocated to administration. The other half was given to clinical tasks. This may free more time for office visits, maximising time for direct interaction with the patient. With time pressure, FP have been found to ask less questions, to conduct less thorough clinical examinations and

Table 9 Analysis of the association between time spent on tasks other than direct patient contacts and number of different tasks performed by age, years of practice, patient list size and job satisfaction

Independent variable	p Value*	95% CI
Time with tasks		
Age	0.161	(−1.45 to 0.24)
Years of service as a FP	0.137	(−1.42 to 0.20)
Patient list size	**0.002**	(−0.11 to −0.02)
FP's job satisfaction	0.085	(−42.47 to 2.76)
Number of different tasks		
Age	**0.021**	(−0.079 to −0.006)
Years of practice as a FP	**0.005**	(−0.084 to −0.015)
Patient list size	**0.011**	(−0.004 to −0.0006)

Bold typeface indicates significance.
*Linear regression.
FP, family physician.

to gave less lifestyle advice.[41] Longer visits may also result in fewer prescriptions, more preventive activities and increased advice on lifestyles.[42] Physician satisfaction seems to increase with adequate visit length[43] and to decrease with more time devoted to administrative tasks.[40] A study of high-functioning primary care practices identified the shift to a shared-care model of work distribution and responsibility as one of the factors improving team functioning and satisfaction. This frees FP from tasks that do not require a physician but that may increase their burden.[44] Job satisfaction is a 'buffer' against burnout.[45] In Portugal, this has an estimated prevalence between 4.1% and 32.4%.[46] One explanation for the lower prevalence of burnout compared to other European countries is Portugal's high ratio of FP per inhabitant with smaller patient lists.[46]

A negative association was found between time spent on tasks other than direct patient care and patient list size. Increasing list sizes may increase pressure on office visits, reducing the time available for tasks that promote accessibility, continuity and coordination of care. Negative associations were also found between the number of different tasks performed and age, seniority and list size. With increasing age and seniority, FP may stop performing certain tasks, losing versatility and flexibility. Older FP, trained in older models of FM/GP practice, may not perform tasks other than direct patient contact. The ageing of Portuguese FP[47] with changes in retirement laws and insufficient recruitment deserves attention.

In conclusion, time spent with tasks other than direct patient contact accounts for a third of the family doctor's workload. Half of this time is spent with tasks directly related to patient care, ensuring accessibility, continuity and coordination of care. These results show that the scope of tasks other than direct patient contact performed by FP in Portugal is consistent with the core features of Family Medicine/General Practice. These results should be taken into account when organising the FP working day. The inverse relationships between time spent with these tasks and list size and age deserve close monitoring.

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