

Comparison of the workload of a trainer and trainee

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SUMMARY. *A general practitioner trainee's workload over one year was compared with a sample of his trainer's workload in order to identify and explain any differences. In line with previous studies the trainee saw relatively fewer patients with chronic diseases, fewer women of child-bearing age and fewer elderly patients but more children, more men and more acute problems. However, the trainee saw a marked excess of ear, nose and throat conditions and asthma which is explained by his special interest in these two subjects. Over the first six months the number of doctor-initiated consultations seen by the trainee increased steadily and remained fairly constant over the second six months. Periodic study throughout the year enabled the provision of extra experience in areas where the trainee had seen few cases.*

Introduction

EARLY studies of the experience of general practitioner trainees were more or less subjective and looked at only limited workload data.^{1,2} Since then increasingly sophisticated studies have looked either at limited samples of many trainees' work³⁻⁸ or at a single trainee's experience over a longer period.⁹⁻¹³ In general the conclusions have been similar. Trainees usually see about two-thirds as many cases as their trainers and they see more children, more men and more acute problems — in particular upper respiratory tract infections. They see fewer chronic conditions, fewer elderly patients, fewer cardiovascular problems and less obstetrics and gynaecology. Trainees are also less likely to participate in special clinics such as antenatal and immunization clinics. Almost all authors have concluded that the trainee's workload should be monitored regularly but there does not appear to be any published work describing this process or its influence on a trainee's experience.

Most studies have not considered the sex of trainers and trainees, yet Huson and Cole⁵ and Bailey¹⁴ concluded that female trainees have a higher workload than male trainees. This may well account for the fact that there were only relatively small differences between the workload of Adam (a female trainee) and Oswald.¹³ Richardson and colleagues^{3,4} concluded that as the training period progresses a trainee's workload becomes more like that of his trainer and Stubbings and Gower¹² showed this in practice. Despite this Presley¹⁵ showed that there is a rapid change in workload for trainees when they become principals.

Fairley¹⁶ studied consultation patterns of a sample of patients and found that patients who saw trainees were more likely to have seen more than one other doctor in the study period and that they were 'trainee accepters' rather than 'trainee seekers'. In Allen and Bahrami's¹⁷ survey of patients' attitudes 17% of patients thought that trainees were not 'proper doctors' and 48% did not want to see trainees for long-standing conditions.

However, it has been shown that it is possible to direct a limited number of patients to the trainee.¹⁸

The aims of this study were to compare the figures for workload with previous surveys, particularly that of Adam and Oswald;¹³ to describe any trend in the trainee's workload over the year; to discover any lack in the trainee's experience by regular monitoring, to take appropriate action and to reassess the workload; to try to elucidate reasons for the differences by closer analysis of the data.

Method

The study practice had two female and three male partners, a male assistant and a male trainee and served a population of 10 200. There was a personal list system and patients were first offered an appointment with their registered general practitioner within 24 hours. If they wanted to be seen sooner, or at a time when their own doctor was unavailable, they were offered an appointment with the trainee, the assistant or another partner. In response to the difficulties of establishing a training workload in a personal list practice the trainee did more evening surgeries. Patients appeared to regard the increased ease of seeing a doctor in the evening as an acceptable substitute for seeing their own doctor. In addition the trainer made a point of asking a number of patients with chronic conditions to obtain follow up from the trainee.

The study periods were 1 February 1987 to 31 January 1988 for the trainee and 23 August 1987 to 31 January 1988 for the trainer. All consultations with the trainee and his trainer which took place on the surgery premises during the study periods were recorded. Special clinics were included in the study. As the trainer made a large number of out-of-hours visits and few routine visits these were excluded from the study.

Data recorded by the trainer and trainee included the patient's Hogben code (for example, for John Smith, date of birth 3 May 1942, the code is SMIJ030542) and sex, whether the consultation was doctor or patient initiated and the diagnosis. Diagnoses were recorded under 31 headings adapted from the Royal College of General Practitioner's classification.¹⁹ Where there was more than one possible code the most specific was used and disease processes were given preference over anatomy. For example, otitis media was coded specifically and all other upper and lower respiratory tract infections were coded together. Any other condition of the ear, nose or throat not falling into either of these categories was coded as 'ENT (other)'. When a patient presented with multiple problems up to three separate diagnostic codes were used.

Initially samples of data were compared manually but subsequently an Amstrad PCW8512 computer was used. The programmes enabled comparison of all the data in almost any combination. Where differences in the analysis occurred direct comparison of subsets of data indicated areas where the trainee's experience should be increased. In this way it was possible to monitor easily the trainee's workload throughout the latter part of the year.

Results

Trainer and trainee comparison

A total of 4635 consultations were studied: 1881 with the trainer (1049 patients, 1.8 consultations per patient) and 2754 with the

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trainee (1867 patients, 1.5 consultations per patient). Comparison of the trainee's workload during the period up to 23 August 1987 with the period after this date showed no significant difference in typically seasonal conditions such as otitis media and respiratory infections and a similar comparison of the trainer's workload during the study period with the following six months also showed no significant difference. Table 1 shows a comparison of the overall workload of the trainer and trainee. The trainer had 5% more consultations with female patients than the trainee and this was highly significant ($P < 0.001$). Figure 1 shows the age distribution of the male and female patients seen by the trainer and trainee in consultations. The trainee saw a relative excess of children, adolescents and young adults. The difference was more marked in the case of female patients where the crossover occurred a decade earlier than for male patients.

Table 1. Comparison of the overall workload of the trainer and trainee.

	Number (%) of consultations	
	Trainer	Trainee
Male patients	830 (44.1)	1365 (49.6)***
Female patients	1051 (55.9)	1389 (50.4)***
Doctor initiated	731 (38.9)	499 (18.1)***
Patient initiated	1150 (61.1)	2255 (81.9)***
Patient given treatment	792 (42.1)	1122 (40.7)
Total	1881	2754

*** $P < 0.001$, χ^2 with Yates' correction.

The workload of the trainer and trainee by diagnosis are shown in Table 2. The results for the sexes are given separately where there was a significant difference for male or female patients but not both, in any category. The trainer saw more chronic conditions such as peripheral vascular and cardiovascular diseases, neoplasms and gastrointestinal disease in men (mainly dyspepsia), more mental or social problems and more female genitourinary disease. The trainer also saw more conditions requiring long-term follow up or for which appointments are usually arranged in advance. These included ante and postnatal checks, screening clinics (mainly children) and contraception. On the other hand the trainee saw a relative excess of ear, nose and throat conditions (four times more), diarrhoea and vomiting, skin diseases, respiratory infections and conjunctivitis. The trainee was also consulted more than twice as often than his trainer for asthma. All consultations for asthma, both alone and with other coincident complaints were analysed as a separate group. The results showed similar age and sex distribution of patients (trainer 55.6% males, trainee 51.9% males), follow up rates (trainer 40.7%, trainee 43.8%), and frequency of investigation (trainer 3.7%, trainee 0.0%) and referral (trainer 1.9%, trainee 3.2%). The trainer prescribed rather more often (trainer 87.0%, trainee 63.8%, $P < 0.01$). Surprisingly it was the trainer rather than the trainee who saw a small but significantly higher proportion of acute respiratory infections in these patients (trainer 16.7% of consultations for asthma and trainees 6.5%, $P < 0.05$). Separate analysis for ear, nose and throat conditions showed no significant difference in any of the parameters studied.

The trainer initiated a considerably higher proportion of his consultations than the trainee (Table 1). The trainer's excess of doctor initiated conditions was largely accounted for by chronic conditions (Table 3). Conversely the trainee's excess of patient-initiated conditions was accounted for by acute conditions.

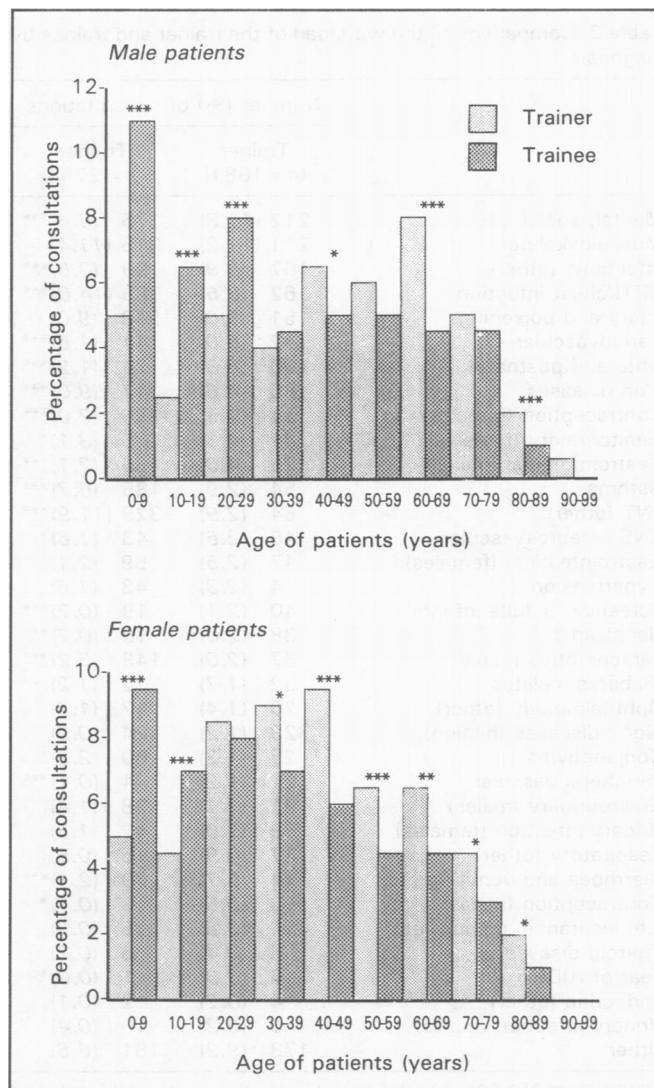


Figure 1. Percentage of consultations undertaken by the trainer ($n = 1881$) and trainee ($n = 2754$) by the age and sex of the patients seen. * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$, χ^2 with Yates' correction.

The trainee's workload

Trends in the trainee's workload were studied by analysing consultation data on a monthly basis. There was a steady increase in the proportion of doctor initiated consultations over the first six months and a fairly constant level over the second six months. Rates of consultation for respiratory and ear infections followed a seasonal U-shaped pattern. The large numbers in this category would produce an artefactual summer peak in all other conditions so consultations for respiratory and ear infections have been excluded from this part of the study.

Consultations for most conditions showed no clear trend. Early monitoring of the trainee's work showed a lack of experience of hypertension and diabetes, both of which were seen in clinics. It was decided that the trainee should share the trainer's clinics and it was possible to direct patients in these categories to the trainee. Consultations for diabetes and hypertension then occurred sporadically, coinciding with the shared clinics; the overall workload of the trainer and trainee was comparable. The trainee's consultations for mental and social conditions increased steadily throughout the year and a similar but less marked trend was observed for neoplasms, contraception and gynaecology.

Table 2. Comparison of the workload of the trainer and trainee by diagnosis.

	Number (%) of consultations	
	Trainer (n = 1881)	Trainee (n = 2754)
Mental, social, etc.	212 (11.3)	175 (6.4)***
Musculoskeletal	211 (11.2)	315 (11.4)
Infections (other)	167 (8.9)	99 (3.6)***
URTI/chest infection	162 (8.6)	386 (14.0)***
Injury and poisoning	151 (8.0)	249 (9.0)
Cardiovascular	112 (6.0)	44 (1.6)***
Ante and postnatal	100 (5.3)	34 (1.2)***
Skin diseases	86 (4.6)	247 (9.0)***
Contraception (females)	84 (4.5)	56 (2.0)***
Genitourinary (females)	81 (4.3)	85 (3.1)*
Gastrointestinal (males)	75 (4.0)	59 (2.1)***
Asthma	54 (2.9)	185 (6.7)***
ENT (other)	54 (2.9)	329 (11.9)***
CNS/cerebrovascular	48 (2.6)	43 (1.6)*
Gastrointestinal (females)	47 (2.5)	59 (2.1)
Hypertension	44 (2.3)	43 (1.6)
Screening (adults/infants)	40 (2.1)	19 (0.7)***
Neoplasms	38 (2.0)	19 (0.7)***
Earache/otitis media	37 (2.0)	143 (5.2)***
Diabetes mellitus	32 (1.7)	32 (1.2)
Ophthalmology (other)	26 (1.4)	47 (1.7)
Blood diseases (benign)	23 (1.2)	24 (0.9)
Conjunctivitis	23 (1.2)	60 (2.2)*
Peripheral vascular	22 (1.2)	4 (0.1)***
Genitourinary (males)	21 (1.1)	38 (1.4)
Urinary infection (females)	19 (1.0)	42 (1.5)
Respiratory (other)	17 (0.9)	15 (0.5)
Diarrhoea and vomiting etc.	14 (0.7)	59 (2.1)***
Contraception (males)	10 (0.5)	3 (0.1)*
Life insurance, driving, etc.	10 (0.5)	5 (0.2)
Thyroid disease	8 (0.4)	6 (0.2)
Fear of AIDS	6 (0.3)	1 (0.0)*
Endocrine (other)	4 (0.2)	2 (0.1)
Urinary infection (males)	3 (0.2)	10 (0.4)
Other	173 (9.2)	181 (6.6)

* $P < 0.05$, *** $P < 0.001$, χ^2 with Yates' correction. n = total number of consultations. AIDS = acquired immune deficiency syndrome. CNS = central nervous system. URTI = upper respiratory tract infection. ENT = ear, nose and throat.

Table 3. Number of doctor and patient initiated consultations by diagnosis.

	Number of consultations	
	Trainer	Trainee
<i>Doctor initiated (chronic conditions)</i>		
Mental, social, etc.	96	31
Cardiovascular	88	22
Ante and postnatal	81	6
Contraception (females)	57	7
Gastrointestinal (males)	38	4
Total	360	70
<i>Patient initiated (acute conditions)</i>		
URTI/chest infection	146	349
Skin diseases	68	215
Earache/otitis media	30	121
Diarrhoea and vomiting etc.	14	53
Total	258	738

URTI = upper respiratory tract infection.

Discussion

One drawback of single trainer/trainee studies is that certain features of the practice may lead to an unusual caseload. Moreover the trainer is usually adopted as the control and the trainee's workload expressed as a relative deficit or excess. A trainer's particular interest in one condition may, however, lead to an apparent deficit in the trainee's workload. In this study the overall results were broadly similar to those of other studies and there is no reason to believe that there were any special features within the practice. Although the trainer's study period was shorter than the trainee's it included both summer and winter months and there was no evidence that any differences were due to seasonal variation.

This study has confirmed that trainees tend to see a relative lack of chronic conditions and an excess of acute conditions but in the case of ear, nose and throat conditions and asthma there was a marked excess in the trainee's workload. Given the trainee's greater proportion of acute work overall it would be reasonable to suppose that the excess in these two conditions was due to a greater number of consultations for acute episodes. However, there are a number of reasons why this appears unlikely. First, no such excess has been demonstrated elsewhere. Secondly, the code 'ENT (other)' specifically excludes acute episodes such as otitis media and sore throats (coded as 'URTI/chest infection'). Thirdly, it was the trainer and not the trainee who saw a small but significant excess of coincident acute respiratory infections in asthmatic patients. Fourthly, if the trainee had seen an excess of these conditions because of acute episodes then he would have had a greater proportion of patient initiated consultations and this was not the case; indeed when these two conditions were studied separately there were no differences between the trainer and trainee for any of the parameters studied.

Immediately before entering the practice the trainee had spent six months as a senior house officer in the local ear, nose and throat department and he maintains a special interest in that subject. Asthma is also a special interest of the trainee. It can be concluded that the trainee's excess of consultations for asthma and ear, nose and throat conditions was due to his interest in these conditions but it is not clear whether patients requested to see him or if the receptionists directed patients to him.

Previous work¹⁸ has shown that it is possible to direct patients with specified conditions to the trainee. If a follow-up appointment is necessary then the trainer may suggest that the patient see the trainee next time. A disadvantage of this is that the patient's continuity of care is interrupted. Directing new patients to the trainee requires the cooperation of the receptionists and the patient has to give some indication of the complaint at the time of booking. Alternatively the trainee could be offered to all patients requesting a new appointment. Practices need to decide to what extent it is appropriate that the trainee sees good numbers of a full range of conditions at the expense of patient choice. Certainly this study has shown that the chronic conditions usually seen by the trainer are often seen in doctor-initiated consultations and thus there is scope for the trainer to invite more of these patients to see the trainee.

The trainee is likely to see relatively few chronic conditions at the beginning of the trainee year. Examination of monthly totals showed that the proportion of chronic conditions did increase throughout the year and in line with this the proportion of doctor initiated consultations seen by the trainee rose over the first six months. If a trainee does two periods of six months as opposed to one year then he may see less of these chronic conditions.

Comparison of the results of this study (male trainee) with those of Adam and Oswald¹³ (female trainee) is interesting. Although Adam and Oswald found little difference between their

workloads many differences were found here. In this study the trainee saw relatively little gynaecology and contraception, and this was reflected in the smaller percentage of women of child-bearing age consulting him. Patients' preference for a female trainee in these conditions has been shown.¹⁴ The female sex of a trainee may balance the effect of patients' preference for their own doctor. Further work comparing male and female trainees is needed. Contrary to Adam and Oswald a marked difference in age distribution was found. It is interesting to note that the cross-over points occurred roughly between the ages of the trainee and trainer.

Patient choice appears to be affected by a number of factors. The age and sex of the trainer and trainee are important and a doctor's particular interest will attract patients. Undoubtedly the personality of each doctor is important but little can be done about this. Practice policy can affect workload and personal lists may have a greater effect on what the trainee sees than shared lists. In addition, booking policy may affect how patients are directed to the trainee.

In conclusion, a trainee can expect to see a different workload from that of his trainer and a trainer can expect to see more patients. However, as the trainee year progresses the trainee tends to see more chronic conditions. Regular monitoring can reveal a trainee's lack of experience and it is possible to direct patients where appropriate. If a trainee's special interests are discovered this will affect his workload.

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