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Student experience in family medicine at McMaster and Glasgow Universities

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Summary

The experiences of two small groups of medical students were recorded when they were doing their main teaching in Family Medicine at McMaster University in Canada, and Glasgow University in Scotland. Time-log diaries were completed for 2 weeks with details of the patients seen. The results are compared in the context of two different approaches to medical education.

Key words: FAMILY PRACTICE/*educ; *EDUCATION, MEDICAL, UNDERGRADUATE; TEACHING/methods; TIME FACTORS; SCOTLAND; ONTARIO

Introduction

This study arose out of a research fellowship spent in the Department of Family Medicine at McMaster University as part of a sabbatical from the Department of General Practice at Glasgow University. This provided an opportunity to compare students' experience of general practice in two very different medical schools.

McMaster medical school was founded in the 1960's at Hamilton in Ontario with the intention of putting into practice the McMaster philosophy (McMaster University, 1974). This implies that learning should be self-directed, based on problem solving, and centred on small group tutorials with continuous evaluation and feedback. While none of these ideas is novel on its own, their combination into a unified approach which determined the structure and function of a whole medical school is probably unique. The medical course at McMaster lasts for 3 years and is divided into four phases. Family medicine is taught in the last of these phases during an 8-week rotation in conjunction with psychiatry (McMaster University, 1976). Students are assigned to small groups under a tutor, whose function is to facilitate self-learning rather than to provide expert knowledge (McMaster University, 1972). The groups meet weekly to discuss matters arising during the rest of the week, when each student is attached to a clinical supervisor who is a practising family doctor. The groups decide on their own method of functioning, which may involve case or topic presentations. The students are evaluated in the middle and at the end of the 8 weeks. In addition each student has to conduct two consultations with a simulated patient, while being watched through one-way glass with video-tape feedback. There is also a weekly tutorial in psychiatry which is being taught during this time, so that half the week is taken up with clinical attachments in psychiatry and half with family medicine. In addition there are several opportunities for horizontal and block electives in family medicine during the McMaster undergraduate course (McMaster University, 1978).

The medical school at Glasgow university is long established and runs a traditional 5-year course which is discipline centred, with an emphasis on lectures and clinics. There are frequent examinations to assess the acquisition of factual knowledge. General practice was only recently introduced as a formal part of the curriculum and the teaching takes place during twelve afternoons in the summer term of the fourth year. The students are in groups of four with general practitioner tutors in the community, and there is an emphasis on writing up cases seen at

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home (Hannay, Barber & Murray, 1976). Time is also spent in the Department of General Practice where there are facilities for computer assisted learning (Murray *et al.*, 1976) and video-tape feedback of consultations (Hannay, 1980). In addition there are opportunities for electives in general practice (Murray, Barber & Hannay, 1978) and an increasing amount of collaborative teaching with other disciplines (Murray *et al.*, 1977). As at McMaster, students in Glasgow are being taught psychiatry at the same time as general practice, although in a separate course. In addition there is also a concurrent course on community or social medicine.

A description of course outlines in specific subject areas gives some idea of different medical curricula, but does not produce a very clear picture of what is actually happening in terms of student experience. This is particularly so in a self-directed learning situation as at McMaster, and even for the small group tutorial scheme in Glasgow. A better way of comparing these two situations is to find out how students spend their time, and the extent of their contact with patients. As family medicine or general practice was being taught at the same time in the two medical schools, and at roughly equivalent stages in the curriculum, it was possible to set up a comparative study on both sides of the Atlantic.

The objective of the study was therefore to compare the experience of medical students at McMaster and Glasgow, in terms of their use of time and patient contact, during the main period of family medicine teaching.

Method

A time-log diary was constructed so that the time spent on various activities could be allocated during any 24-hour period, as well as a note made of patients seen. The questionnaire was first piloted in each location, and adjustments made to take account of differences between the two centres. Items were to be completed to the nearest quarter of an hour at the end of each day, including weekends.

At any one time there are three groups of about six students each, doing the family medicine clerkship at McMaster. As the groups were randomly selected this represented a cluster sample of approximately 18% of the 100 medical students in each year. In Glasgow there are about 200 students a year, and for general practice, these are divided into groups of four which are also unselected. An equivalent sample therefore required nine such groups in Glasgow.

Two weeks seemed a reasonable period to ask students to keep such a diary, which was towards the end of their rotation, as the questionnaire included information about their experience of family medicine as a whole. The purpose of the study was explained to the students beforehand, emphasizing that keeping the time-log diary was entirely voluntary, and that the findings would be individually anonymous so that no names were required on the questionnaire. The results were treated in aggregate for comparative purposes only, and expressed as the average number of hours per week, or average number of patients seen per week, for each of the two samples.

Results

The sample size number of completed questionnaires is shown in Table 1, which also compares some of the characteristics of the students who kept the time-log diaries at McMaster and Glasgow.

TABLE 1. Student samples

	McMaster	Glasgow
Sample size	16	36
Number of respondents	14	10
Average age	27	22
Females (%)	21	30
Married (%)	43	0
With previous careers (%)	62	10
With previous degrees (%)	100	20

Table 2 gives the average number of hours per week spent in general practice at the two medical schools, with a breakdown of the various activities. Table 3 shows how the rest of the time was spent during the period of family medicine teaching, and Table 4 indicates how students were using their studying time.

The total number of hours adds up to slightly more than the number of hours in a week for the McMaster students and slightly less for Glasgow. This is because the times put down for each day did not always add up to exactly 24 hours, which resulted in slight distortions when the average times were calculated.

Table 5 gives the average number of patients seen per week by age group at McMaster and Glasgow,

TABLE 2. Student experience in general practice

General practice	Average number of hours/week	
	McMaster	Glasgow
Patient contact		
In surgery		
alone	5·0	0
accompanied or monitored	6·0	0·03
At home		
alone	0	0·3
accompanied	0·1	0·6
Total—patient contact	11·1	0·9
No patient contact		
Discussion	3·8	0·6
Other	1·3	0·2
Total—no patient contact	5·1	0·8
Simulated patients and evaluation	0·6	0

TABLE 3. Other student experience during general practice

	Average number of hours/week	
	McMaster	Glasgow
Psychiatry		
Patient contact	9·9	3·7
No patient contact	11·4	5·5
Evaluation	0·9	0
Community Medicine	0	3·1
Other clinics, seminars, or lectures	1·4	4·9
Studying	18·3	22·6
Leisure or social	33·1	35·3
Travel	7·6	9·7
Meals	12·0	11·8
Sleep	53·1	55·7
Other	8·8	13·0

TABLE 4. Students' studying time. Average number of hours per week

	McMaster				Glasgow			
	General practice	Psychiatry	Other	Total	General practice	Psychiatry	Other	Total
Library	3·2	2·0	—	5·2	0	1·2	0·6	1·8
Home	5·5	6·7	—	12·2	0·8	11·1	8·8	20·7
Audio-visual	0	<0·1	—	<0·1	0	0	0	0
Other	0·3	0·5	—	0·8	0	0	0·1	0·1
Total	9·0	9·2	—	18·3	0·8	12·3	9·3	22·6

and Table 6 compares the average number of conditions seen per week in the two centres. There were more conditions seen than patients, because many had multiple problems or diagnoses. These were classified according to the main categories of the International Classification of the Health Problems of Primary Care (Royal College of General Practitioners, 1976). At the end of the time-log diaries students were asked to rank their preference for general practice teaching in relation to psychiatry and community medicine, and to give any comments on the teaching. Table 7 compares the preferences of the two groups for the appropriateness of teaching family medicine in conjunction with psychiatry and community medicine.

The McMaster students appreciated the amount

TABLE 5. Student experience of patients

Age—sex group	Average number of patients seen/week					
	McMaster			Glasgow		
	General practice	Psychiatry	Other	General practice	Psychiatry	Other
0– 9	2·4	0·4	—	0·6	0	0·05
10–19	2·2	1·6	—	0·15	0·35	0·65
20–29	3·2	1·5	—	0·05	0·5	0·7
30–39	2·4	1·5	—	0·1	0·85	0·4
40–49	1·6	0·6	—	0·15	0·8	0·7
50–59	1·9	1·1	—	0·2	0·55	1·1
60–69	2·3	0·9	—	0·3	0·6	1·1
70–79	0·7	0·1	—	0·2	0·25	0·65
80+	0·2	0·5	—	0·05	0·25	0·45
Not known	2·6	0·1	—	0	0	2·1
Total	19·5	8·3	—	1·8	4·15	7·9

TABLE 6. Student experience of patients

Disease categories	Average number of conditions seen/week					
	McMaster			Glasgow		
	General practice	Psychiatry	Other	General practice	Psychiatry	Other
1. Infective and parasitic disease	0·4	0	—	0·25	0	0·35
2. Neoplasms	0·1	0	—	0	0	1·75
3. Allergic, endocrine, nutritional, metabolic	0·8	0	—	0	0·05	0·35
4. Diseases of the blood and blood forming organs	0·2	0	—	0	0·05	0·10
5. Mental disorders	1·4	9·0	—	0·20	3·25	0·35
6. Diseases of nervous system and sense organs	1·3	0	—	0·25	0·15	0·40
7. Diseases of circulatory system	1·9	0	—	0·25	0·05	0·95
8. Diseases of respiratory system	1·9	0	—	0·20	0	0·05
9. Diseases of digestive system	0·5	0	—	0·05	0	2·15
10. Diseases of genito-urinary system	0·6	0	—	0·30	0	0·55
11. Pregnancy, childbirth, puerperium	1·4	0	—	0	0	0
12. Diseases of skin and subcutaneous tissue	0·8	0	—	0·05	0	0·35
13. Diseases of musculo-skeletal system and connective tissue	1·2	0	—	0·05	0·05	0·80
14. Congenital abnormalities	0	0	—	0·05	0·95	0
15. Perinatal morbidity	0	0	—	0	0	0
16. Symptoms and ill-defined conditions	1·6	0	—	0·15	0	0·25
17. Accidents, poisoning, and violence	1·2	0	—	0	0	0·55
18. Prophylactic procedures	2·3	0	—	0	0	0
Not known	2·8	0	—	0	0	0
Total	20·4	9·0	—	1·80	4·55	8·95

TABLE 7. Preference for general practice teaching

Preference	Average score	
	McMaster ($n=12$)	Glasgow ($n=10$)
General practice taught alone as a block	3·8	3·0
General practice taught in conjunction with psychiatry	3·5	2·5
General practice taught in conjunction with Social or Community Medicine	3·25	2·8
General practice taught in conjunction with Psychiatry and Social or Community Medicine	2·0	3·8

Preference graded from 5 for 'Most appropriate' to 1 for 'very inappropriate'.

of clinical material they saw during their clerkship in family medicine and psychiatry. Some found it difficult to switch from one to the other in the same rotation, although many behavioural problems were common to both. There is no formal course in community or social medicine at McMaster, unlike in Glasgow where it is taught at the same time as general practice and psychiatry.

In general the Glasgow students felt that there should be more general practice teaching, perhaps as a block of time, with more opportunities for sitting in on surgeries and possibly exposure to general practice during the pre-clinical years. One or two mentioned the difficulties of travelling to more distant practices, and the value of spending more time with ancillary staff. The psychiatry teaching was considered to be good, although some students felt there was too much emphasis on writing-up case histories in both psychiatry and general practice. The community medicine lectures were not always well received, although the visits during that part of the course were considered worthwhile.

Discussion

Medical students at McMaster were older than those in Glasgow and more likely to be married with previous degrees and careers. This reflects the fact that medicine is a postgraduate subject in North America, unlike the United Kingdom where most students enter a medical course direct from school. The poor response amongst Glasgow students was probably due to the lack of personal contact during the research period when the author was mainly in Canada.

Students at McMaster spent more time in general practice and psychiatry, except that the Glasgow students were more likely to see patients at home. The latter also spent longer periods travelling and studying than those at McMaster, although much of this study time was on subjects other than general practice. This was partly due to the fact that there is no examination in general practice in Glasgow, unlike psychiatry and community medicine; although written case histories are marked by the tutors and count towards the finals in medicine. It is interesting that audio-visual aids were hardly used at all, in spite of being available at both the centres especially McMaster.

As well as community medicine, the Glasgow students were also doing clinics in surgery and orthopaedics, which in fact provided more clinical material than the general practice and psychiatry teaching put together. Overall, students at McMaster were seeing far more patients than those at Glasgow, particularly in family medicine.

The average number of patients seen per week was too small to draw conclusions about differences in the age groups and conditions involved. It is interesting that there was much more experience of prophylactic procedures in family medicine at McMaster, which was perhaps a reflection of the way in which item-for-service payments may influence priorities for family doctors. The comparatively large number of diseases of the digestive system seen by Glasgow students was due to the hospital clinics they were attending, rather than to any increase in morbidity. On the whole the McMaster students would have liked their clerkship in general practice to have been in one block. On the other hand Glasgow students preferred the status quo with general practice being taught in conjunction with psychiatry and community medicine, although with less of the latter and more time spent in general practice.

The McMaster course places great emphasis on self-directed learning in contrast to the medical curriculum in Glasgow which is based on the teaching of different specialities. These distinctions are not so clear cut for general practice, when McMaster students are under supervision for more than half their time in contact with patients, and where Glasgow students are taught in small groups. Students in Glasgow appeared to spend more time studying, but little of this was on family medicine and overall they were only working a 42-hour week compared to 53 hours per week for those at McMaster. However the amount of time spent on academic pursuits by medical students has not been found to be related to subsequent examination performance in American studies from Illinois (Fischer & Corsonas, 1965), and Michegan (Davis & Heller, 1976) where medical students worked a 60-hour week including weekends.

Problem-solving and self-directed learning are very appropriate to undergraduate teaching in general practice, and stimulate interest more than the didactic teaching of different disciplines. Another advantage of the McMaster system is the way in which the tutorial group encourages personal interaction between staff and students, which is missing in

more structured courses, where contact tends to be formal and episodic.

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