Evaluation of general practice clinical attachments by fourth year students

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An analysis of the evaluation by fourth year students of their clinical attachment learning experience in general practitioners' offices was conducted. There was a statistically significant trend towards improved ratings for six items from academic years 1986-87 to 1993-94. Increasingly more students rated very highly the attachment experience and felt it gave them the opportunity to practise and enhanced their learning in the physical examination of a patient, in understanding a patient's health problems in relation to the family and community, in educating the patient, in defining and solving a patient's problems, and gave an insight into the realities of general practice. The improvement in ratings was greatest after the 1990-91 academic year. This could be attributed to the introduction of the practice of sending student feedback to the tutors and the development and implementation of a checklist of tasks which students were expected to perform in the clinic setting.

Introduction

During the fourth year of the five-year medical curriculum at the Chinese University of Hong Kong, all students rotate through a ten-week Community and Family Medicine module. The principles and practice of family medicine are taught through classroom sessions, small group sessions (videotapes, role plays, tutorials), home visits, and clinical attachments. For the clinical attachments, in addition to four sessions at the Chinese University Family Medicine Teaching Clinic, each student is sent into the community to follow two private solo practitioners and one group practice or community hospital outpatient practice. Each attachment consists of four weekly two-hour sessions.

The honorary clinical tutors kindly take the students into their clinics because they are keen to teach the

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new generation about family medicine. The Department of Community and Family Medicine publishes a tutor handbook which outlines its teaching objectives, teaching programme, and expectations for the clinical attachments. At the beginning of each academic year, there is an orientation session for new tutors. Twice yearly, tutor meetings are held to discuss teaching techniques and the latest developments in the curriculum or research. However, due to time and distance, many tutors cannot regularly attend these meetings and only receive the written minutes. Audiotapes and videotapes of some of the discussions were made and circulated, but this proved to be expensive, time-consuming and limited, as only a small number of tutors could be reached at a time.

Innovations to improve communication between the department and the tutors

In order to solve this communication problem, we began in 1989-90 to forward student feedback to some of the tutors after making minor adjustments to the feedback form and adding the item "opportunity for practise". Initially, we sent only positive feedback. The tutors were very receptive. At a tutor meeting in July 1990, most tutors present indicated their eagerness to receive the feedback, even if it was negative. A letter

was then sent to determine the opinions of all tutors. With few exceptions, most preferred to know the student's evaluation. Thus the process of regularly sending student feedback began at the end of the 1990-91 academic year.

A clinical skills checklist with 22 items was also introduced in 1990-91. This included a number of physical examination skills and simple investigation procedures (Appendix). The purpose of the checklist was two-fold: to emphasise to the students that they should maintain their clinical skills, and to promote more student participation and hands-on practice during the clinical attachments. The tutors were requested to sign only if the student had performed the task satisfactorily.

Study aims

This study represents an audit of student ratings of their clinical attachments over the past eight years to evaluate whether implementing a checklist of clinical skills and providing student feedback had contributed to improving tutor teaching skills and student's ratings.

Materials and methods

Each academic year commences in July and ends in June. At the end of each module, the tutor assesses the student's performance and gives comments about the teaching programme on a form. The students are also invited to comment on the best feature of the experience and suggest any areas for improvement. On the

same form, they anonymously rate each attachment on eight items using a scale of zero to five (from no value to very high value). The attachments were evaluated as to whether they enhanced the student's learning in various aspects:

1. Provision of opportunity to practise.
2. Eliciting physical signs.
3. Understanding a patient's health problems in relation to the family and community.
4. Educating the patient.
5. Defining and solving a patient's problems.
6. Providing a good insight into the realities of general practice.
7. Learning history-taking and communication skills.
8. Learning practice management.

Student feedback over the years had been kept and an analysis of their evaluation of the learning experience in private practitioner clinics from 1986-87 to 1993-94 was carried out. Only the analysis of the evaluation of solo practitioner attachments are presented in this paper, as it is difficult to compare group or hospital outpatient practices in which more than one tutor may teach a student during an attachment.

Using the Epistat program (TL Gustafson, Texas, US), Chi square analysis for trend was performed comparing the number of tutors with low ratings (zero to one) with the rest of the group (two to five), and comparing the number of tutors with high ratings (four to five) with the rest of the group (zero to three) for each item over the course of the eight years.

Table 1. Number of tutors, students, and clinical attachments by year

Academic year	Regular tutors No. (%)	New tutors No. (%)	Total no. of tutors	Dropped-out tutors No. (%)*	Total no. of students	No. of scheduled attachments	No. of attachments with feedback	Response rate (%)
86/87	26 (55)	21 (45)	47	6 (19)	85	170	165	97
87/88	42 (82)	9 (18)	51	5 (11)	100	200	184	92
88/89	44 (75)	15 (25)	59	7 (14)	83	166	162	98
89/90	52 (72)	20 (28)	72	7 (12)	112	224	209	93
90/91	58 (77)	17 (23)	75	14 (19)	130	241	226	94
91/92	62 (78)	17 (22)	79	13 (17)	116	232	229	99
92/93	63 (80)	16 (20)	79	16 (20)	108	216	199	92
93/94	66 (78)	19 (22)	85	13 (16)	142	189	189	100

* Percentage of previous year's total number of tutors

Results

As shown in Table 1, the total number of solo private practitioners almost doubled from 47 in 1986-87 to 85 in 1993-94. These practices provided a total of 165 attachments in 1986-87 and 229 attachments in 1991-92. The number of attachments fell to 199 in 1992-93 due to a smaller class size, and to 189 in 1993-94 because the number of attachments had been reduced from two solo doctors per student to one per student due to a one-third increase in class size.

In the academic year 1986-87, 45% of the tutors were new recruits. In each of the following years, 72% to 82% of tutors remained on a regular basis. As the submission of the feedback forms was compulsory, the response rates of the students were very high, from 92% to 100% each year during the study period.

Table 2 shows the results of the Chi square tests for trend. There was a statistically significant trend towards improvement in ratings of the tutors in six of eight items from 1986-87 to 1993-94.

For four items (students being given the opportunity to practise, being able to learn to elicit physical signs, understanding a patient's health problems in relation to the family and community, and opportunity to educate the patient) there was a statistically significant increase in the number of tutors achieving a high rating (4 to 5) and a decrease in the number with low ratings (0 to 1) over the study period. For another two items (students being able to gain insight into the realities of general practice, ability to define and solve a patient's problems) there was a statistically significant increase in the number of tutors achieving high ratings.

The improvements were greatest after 1990-91 for the above six items. Improved ratings for learning about communication skills and history-taking commenced in 1992-93, but it was too early to predict whether the increase was significant or not.

Discussion

General trend towards improved ratings

The persistent trend towards increased ratings for the clinical attachment to private practitioners is very encouraging. A number of factors can be proposed to explain this trend.

Firstly, it was very likely that the tutors were becoming more experienced at clinical teaching as time went on. However, this trend was not limited only to those who had been teaching for many years. It occurred in spite of the addition of approximately 25% new tutors each year and a mean dropout rate of 15%. This phenomenon can best be attributed to the gradual maturing of the specialty of family medicine in Hong

Table 2. Percentages of attachments with high ("4 to 5") ratings by item by year

Academic year	No. of attachments with feedback	Opportunity to practise	Physical examination	Family & community	Patient education	Problem definition	Insight into general practice	History & communication skill	Practice management
		%	%	%	%	%	%	%	%
86/87	165	-	26	28	39	42	68	47	52
87/88	184	-	35	26	39	49	71	41	48
88/89	162	-	29	37	38	43	67	42	53
89/90	209	36	38	43	45	45	70	39	44
90/91	226	35	27	36	37	43	70	39	46
91/92	229	44	34	40	46	43	67	40	48
92/93	199	45	40	37	50	51	73	43	49
93/94	189	51	45	44	51	58	80	57	56
χ^2 for trend		13	12.2	12.4	11.4	6.5	4.9	2.7	0.2
P value		< 0.001	< 0.001	< 0.001	< 0.001	0.01	0.03	0.1	0.6

Kong over this period of time. There are now increased opportunities for postgraduate training and continuing education, and more doctors have passed their fellowship examination in family medicine. Our department's postgraduate diploma course in family medicine, which commenced in 1985, also contributed to the pool of trained family doctor tutors. The jump in ratings after 1990-91 could be attributed to the innovations which were implemented during this academic year.

Feedback as an important behaviour reinforcer

The literature has many references on the use of feedback evaluation to reinforce the behaviour of both teachers and students.[1-5] Many studies have demonstrated that feedback can help teachers improve their ratings on student evaluation.[6-13] Eash and Rasher also showed that improvement in instruction occurred as a result of changes to the way teaching practices were monitored.[14] From our results, it was found that sending student feedback to the tutors acted as an important reinforcer of their teaching skills. It helped identify what the students liked about their teaching and how they could improve what they were doing.

Rippey found that favourable changes in teaching are likely to occur as a result of evaluation, when that evaluation is conducted early in the course while the teacher still has adequate time to make modifications.[6] The characteristics of constructive feedback for learners emphasised in the literature include: sufficiency, specificity, timeliness, regularity, relevance, encouragement, incorporation of recommendations, and reciprocity.[4-5] Many of these characteristics also hold true for feedback to the teacher. We have changed from sending all the feedback at the end of the academic year to sending it twice-yearly, from 1991-92 onwards. In this way, the tutors can modify their teaching techniques when they are still taking students, and do not have to wait until after the summer holiday to adopt new styles. Ideally, we would like to send the feedback after every module.

Reading the literature reveals that although favourable ratings motivate teachers to teach better, unfavourable feedback may produce erratic behaviour aimed at removing the source of negative reinforcement or embarrassment.[6] In view of this, we did not mail the very occasional form with an immature or rude remark, but only noted them down in our departmental records. We included with the feedback, a letter reminding the tutors not to take any criticisms too personally, as the students' perception of the value of the attachment depended not only on the quality of the

teaching but also on the case-mix, the number and type of patients seen, their learning needs and interests at that particular stage, and their attitude towards family medicine in general. The students' attitude to learning could have influenced the tutor's teaching. We are grateful to our tutors for their tolerance and acceptance of the students' feedback.

The clinical checklist

The checklist was effective in informing the tutors of what the students should do during their attachments. Since students had to collect enough signatures before they could sit the module examination, they were motivated to take more initiative in requesting the tutors to give them the opportunity to practise.

In the 1992-93 academic year, in response to feedback from the tutors, four extra tasks in interview skills were added to the checklist. The ratings for "being able to learn communication skills" improved afterwards, even though the trend of improvement is not yet statistically significant due to the short time-lag.

Clear, concise communication of the department's expectations with regular feedback was shown to be beneficial to all parties concerned: the tutors, the students, and the department.

Student comments about the attachment

As the major burden of illness presents to doctors in the community, it is important for undergraduates to be exposed to a spectrum of diseases and the practice of medicine in the community. Prior to this attachment, the majority of the students' experience had been the episodic care of patients in hospital. The concepts of continuing care and a long term doctor-patient relationship with patients and their families were quite unfamiliar to them. To many, the community clinical attachment experience was an eye-opener.

As two students in 1994-95 recently commented in their attachment reports:

"In the past, I shared with ordinary people the thinking that most of the general practitioners were profit-oriented, and could only deal with minor diseases. I have changed my view completely after my clinical attachments."

"Before the attachment, I could not imagine there could be such a good doctor-patient relationship, nor imagine that the doctor could have such a powerful therapeutic effect on the patient."

Limitations of the study

This study was based on the self-report of students. Response rate was not a problem, but some students could have been too polite to give negative ratings or comments about their tutors. Although the feedback forms were anonymous and returned to the department after the tutors had given them their grade, since each tutor teaches only one to two students per module, some students may have been worried that their tutor could identify who they were. Direct observation by the departmental staff of how the tutors teach would be more reliable, but is unrealistic. It would require tremendous resources and would be too intrusive on the tutors.

Other factors may have affected the change in ratings. Theoretically, student expectations and their views about family medicine could have changed over the past eight years, but there is no obvious evidence to suggest this.

Further analysis of the ratings of the group practices could be carried out. Focus group discussions with students and tutors present may generate deeper insights into the difference in expectations of the two, and their satisfaction with the attachment experience.

Efforts are being made to provide ongoing teacher training and stimulation. At a recent tutors' meeting, the topic of how to teach medical students about the patient and the family was discussed using a videotape demonstration. With technological advances, more innovative ways of communicating with the tutors and facilitating their teaching will be devised.

Conclusion

We are grateful to all the honorary clinical tutors who have provided our undergraduates with the opportunity for one-to-one teaching in their clinics over the past 10 years. This has been voluntary and is invaluable for the students.

The clinical attachments to general practitioners have been receiving increasingly positive feedback from the students. There was a statistically significant trend towards improved ratings in six of eight items from 1986-87 to 1993-94. The greater improvement in ratings after 1990-91 could be attributed to the practice of regularly sending student feedback to the tu-

tors and the development and implementation of a checklist of tasks which students were expected to perform in the clinic setting. Instituting a clear checklist of the department's expectations and regular feedback to the teachers have served to enhance the learning experience of the students.

Acknowledgements

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APPENDIX
CHECKLIST OF CLINICAL SKILLS
(for the students)

Student's Name: _____   1993/94   Module I / II / III

During your term in Family Medicine we want you to practise the following skills. Ask your tutor to initial each item after you have performed it. You are responsible for seeing that your list is filled in. Each tutor should sign not more than six items. We expect you to have undertaken at least 14 of these tasks satisfactorily by the end of your time here.

	Comments	Tutor's signature

PATIENT INTERVIEWING

1.   Take a pertinent history about a problem

2.   Take a relevant family history

3.   Explain diagnosis to a patient

4.   Explain treatment to a patient

GENERAL EXAMINATION

5.   Measure weight, height and calculate BMI

6.   Take patient's temperature

7.   Take blood pressure

SYSTEMS EXAMINATION

8.   Examine the ears

9.   Perform hearing test with a tuning fork

10.   Examine the eyes & perform ophthalmoscopy

11.   Test visual acuity and fields of vision

12.   Examine the cranial nerves

13.   Examine the nose and throat

14.   Examine the chest

15.   Examine the cardiovascular system

16.   Examine the abdomen

17.   Examine the breast

18.   Examine the peripheral nervous system

19.   Examine the back

20.   Examine the neck

21.   Examine the shoulder or the knee joint

PROCEDURES

22.   Syringe wax from an ear (observed)

23.   Perform peak flow testing

24.   Instruct in the use of inhaler

25.   Perform ECG

26.   Perform urinalysis