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Patients' Perceptions of Medical Students in a Longitudinal Family Medicine Clerkship

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Background: Although educational characteristics of ambulatory clinical environments are becoming clearer, less is known concerning patient opinions about participating in medical student instruction in ambulatory settings. Such perceptions may have an important influence on recruitment and retention of community faculty. **Methods:** Surveys were administered to 121 patients seen by medical students during a longitudinal family medicine clerkship. The survey explored patients' opinions regarding the extent of direct student involvement in their care, students' competence, and patient feelings about participating in medical student instruction. **Results:** Patients felt that students were highly involved in providing care and that they performed competently and professionally. Patients found participation in medical education enjoyable, not excessively time-consuming or disruptive, and believed that students' participation improved the quality of care they received. **Conclusions:** Patients in our family medicine clerkship do not have negative perceptions about their participation in medical student education. In fact, this study suggests that such participation may actually enhance patient satisfaction.

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As ambulatory practice assumes greater prominence in medical education, analyses of education in this setting are proliferating. Data that provide measures of educational outcomes for ambulatory clerkships and detail the perceptions of both learners and teachers are now available.¹ As a result, educators are gaining a clearer picture of both educational content and process in the ambulatory clinical context.²⁻⁵

One crucially important issue, namely that of patients' perspectives, has received relatively little attention.^{6,7} This latter issue may be of particular concern to medical educators faced with the prospect of recruiting faculty for ambulatory teaching. We are finding that prospective faculty, as well as ambulatory practice administrators, are frequently expressing concern that their patients will not be well disposed to participating in medical student education. In this study, we present a report of patient perceptions regarding their participation in medical student education during a longitudinal family medicine clerkship.

Methods

This study was conducted in the Department of Family Medicine at the University of California, Irvine (UCI). The family medicine clerkship at UCI features a decentralized year-long longitudinal format in which individual students spend a half day per week working in the office of a faculty preceptor. Although more than 50 geographic locations serve as clerkship training sites, the clerkship has been organized into four clusters of practice sites for purposes of administrative oversight and outcomes analysis.⁸ These site clusters include (1) academic-based practices, (2) community clinics, (3) large-group practices, consisting of three multi-site practice organizations, Kaiser Permanente, Bristol Park Medical Group, and Yorba Linda Medical Group, and (4) small-group practices, consisting of several medical groups having single-site practices. Student clerkship assignments are to a single faculty preceptor for the full 12-month duration of the clerkship. Although a small number of students may have specific preceptor assignment requests, more than 90% of assignments are made on a random basis. The study was conducted late in the third year, between clerkship month 9 and clerkship month 12.

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Subjects

The study sample consisted of patients at the clinical sites used by 45 medical students, selected from among 87 medical students who completed the clerkship during the 1998–1999 academic year. Study sites were selected based on the geographic proximity of the teaching practice sites ($n=23$) to the College of Medicine. An effort was made, however, to assure that all four types of teaching practice clusters were represented.

A study investigator met with each participating student's faculty preceptor prior to the beginning of data collection. The preceptors were instructed to obtain informed consent from patients and then administer the patient satisfaction survey to three consecutive patients during the course of a single office teaching session. Should a patient refuse to participate, the preceptors were asked to note this on the survey and return it uncompleted. We selected three consecutive patient encounters as our unit of analysis because a previous study of student activity in our clerkship demonstrated that the mean number of patient encounters per clinical session at the four teaching practice clusters ranged from 2.6 to 4.2.⁸

Instrument

The survey instrument consisted of 29 questions that explored patients' perceptions regarding the extent of student participation in their care, attitudes about participating in medical student education, feelings about the specific student participating in their care that day, and ratings of the student's clinical performance during the course of the visit. Individual survey items used 5-point Likert scales (1=strong disagreement, 2=disagreement, 3=neutrality, 4=agreement, and 5=strong agreement). The survey instrument required approximately 3 minutes for patients to complete. No patient identities were recorded on surveys, and student identities were coded numerically to assure confidentiality during the data analysis process.

Data Analysis

Mean scores and standard deviations were calculated for the overall study sample as well as for subsamples from each of the four teaching practice clusters. Variations in patient perceptions between the four practice site clusters were assessed using analysis of variance.

Results

The study data include 121 completed patient satisfaction surveys. These represent 3 surveys completed for 31 students and 2 surveys completed for 14 students. The 45 students in the study sample were found not to differ from the class at large ($n=87$) in terms of gender distribution or measures of clerkship academic performance, including faculty evaluations, written examination performance, and objective structured clinical examination performance. When compared to

the distribution of the class at large, the distribution of study students to practice sites was somewhat more heavily weighted toward the academic and community clinic sites and somewhat less representative of the small-group practice sites. This is not surprising since study participation was based on geographic proximity to the College of Medicine.

Patients' responses included 29 completed surveys from both the academic and small-group practice sites, 49 completed surveys from the large-group practice sites, and 14 completed surveys from the community clinic sites. Although patients were given the option of not participating during the informed consent process, to our knowledge none opted not to participate.

Survey Results

The patient perception survey results are summarized in Table 1. Patients felt that the students were heavily involved in their medical care, with 89% agreeing or strongly agreeing that students performed a history, 86% agreeing or strongly agreeing that students performed a physical exam, and 81% agreeing or strongly agreeing that students provided them with health information. Patients rated student clinical competence as quite high. In particular, 83% of patients agreed or strongly agreed that the students obtained accurate histories, 83% agreed or strongly agreed that students performed competent exams, 87% agreed or strongly agreed that students provided useful information, and 98% agreed or strongly agreed that students behaved in a professional manner.

Patients completing the surveys also reported positive opinions regarding their participation in medical student education. Eighty-nine percent agreed or strongly agreed that seeing medical students was enjoyable. Although medical student participation was not felt necessarily to improve preceptors' competence, 77% of patients agreed or strongly agreed that medical student participation did, in fact, improve the quality of care that they received. On the opposite end of the spectrum, only 10%–12% of survey patients agreed or strongly agreed that medical students' participation required too much time or decreased patients' time with their physician, and only 6% of patients agreed or strongly agreed that medical students' involvement interfered with their patient-physician relationships.

A summary comparison of patients' responses from the various practice sites can be found in Table 2. The small number of patients representing the community clinics site cluster precludes meaningful analysis of the significance of any differences in patient perceptions found at this teaching practices cluster. Based on analyses performed across the remaining sites, there were no statistically significant differences between the academic practices, small-group practices, or large-group practices clusters.

Table 1
Patient Perceptions of Medical Students Participating in a Longitudinal Family Medicine Clerkship

<i>Patient Perception Item</i>	<i>Strongly Disagree (1)</i>	<i>Disagree (2)</i>	<i>Neutral (3)</i>	<i>Agree (4)</i>	<i>Strongly Agree (5)</i>	<i>Mean Likert Score</i>
The medical student only observed the visit with my doctor.	20	54	11	17	12	2.54 SD=.09
The medical student interviewed me.	3	4	7	58	57	4.26 SD=.11
The medical student examined me.	3	7	7	55	46	4.14 SD=.11
The medical student provided me with information.	0	7	16	49	47	4.14 SD=.10
The medical student accurately obtained my history.	0	8	13	61	42	4.10 SD=.11
The medical student performed a competent exam.	1	4	15	56	40	4.12 SD=.10
The medical student provided useful information.	0	2	14	55	48	4.25 SD=.11
The medical student behaved in a professional manner.	1	0	1	49	47	4.53 SD=.13
Seeing the medical student is enjoyable.	0	1	12	62	43	4.25 SD=.11
Having medical student participate takes too much time.	32	56	20	10	2	2.12 SD=.10
Having medical student involved interferes with the relationship I have with my doctor.	36	61	15	3	4	1.97 SD=.11
Having medical student participate decreases my time with the doctor.	27	54	24	11	3	2.24 SD=.09
Having medical student involved improves my doctor's competence.	8	21	36	36	14	3.23 SD=.08
Having medical student involved improves the quality of care I receive.	0	4	24	59	33	4.01 SD=.10

SD—standard deviation

Number of students = 45; number of patient surveys = 121

Discussion

The results of our study show that patients do not have negative perceptions of having medical students participate in their care. In fact, participation of medical students may have enhanced students' satisfaction.

This study adds to a relatively small body of work that examines how patients perceive their participation in medical student education. One dimension of such assessments has been to examine patients' satisfaction with medical students' performance. Evaluations in this context have focused both on specific elements of medical students' performance, such as interviewing skills, and more recently, more comprehensive service-driven measures of patient satisfaction.^{9,10} Such patient satisfaction surveys, while timely, have not provided specific insight into how patients feel about the process of participating in medical student education.

This study is directed toward examining three elements of patient satisfaction with medical students:

patient perceptions of the extent of medical student involvement in their care, patient perceptions regarding the competence of students, and patient feelings about participating in medical education. No single previously published study has combined these three particular elements in examining patient attitudes toward medical students in an ambulatory care setting. Although not identical, the survey items used in the current study do, however, overlap considerably in terms of content with instruments used in previously published studies examining patient satisfaction in ambulatory educational environments.^{6,7}

Ideally, assuring instrument validity entails the use of an independent means of measuring study parameters. One set of study parameters—namely, the extent of student involvement in patient care—has previously been independently measured by our group using student encounter logs.⁸ The patient perceptions of student participation in care reported in this study closely

Table 2
A Comparison of Patient Perceptions at Various Teaching Site Clusters

<i>Patient Perception Item</i>	<i>Academic Practices (n=11, p=29) Mean Likert Scores</i>	<i>Large-group Practices (n=18, p=49) Mean Likert Scores</i>	<i>Small-group Practices (n=11, p=29) Mean Likert Scores</i>	<i>Community Clinic Practices (n=5, p=14) Mean Likert Scores</i>
The medical student only observed the visit with my doctor.	2.33	2.56	2.59	2.77
The medical student interviewed me.	4.31	4.39	3.93	4.29
The medical student examined me.	4.14	4.25	3.86	4.31
The medical student provided me with information.	4.10	4.14	4.17	4.17
The medical student accurately obtained my history.	4.34	3.89	4.26	4.14
The medical student performed a competent exam.	4.29	4.00	4.19	4.07
The medical student provided useful information.	4.21	4.40	4.10	4.14
The medical student behaved in a professional manner.	4.72	4.49	4.70	4.21
Seeing the medical student is enjoyable.	4.21	4.31	4.21	4.14
Having medical student participate takes too much time.	1.90	2.27	1.90	2.50
Having medical student involved interferes with the relationship I have with my doctor.	1.72	2.08	1.79	2.54
Having medical student participate decreases my time with doctor.	2.11	2.29	2.03	2.71
Having medical student involved improves my doctor's competence.	3.31	3.26	3.22	3.00
Having medical student involved improves the quality of care I receive.	4.10	3.98	4.07	3.79

Total number of students = 45; total number of patient surveys = 121

n—students

p—patient surveys

Items were scored using 5-point Likert scales—1=strong disagreement, 2=disagreement, 3=neutrality, 4=agreement, and 5=strong agreement.

parallel the observations recorded by students using the patient encounter logs.

Limitations

Two elements of our study methods, namely the non-random selection of participating practice sites (and thus students) and the technique of survey administration, may have introduced bias into the outcomes of our study. However, the lack of difference in perceptions found between patients at the academic, small-group, and large-group practices sites, along with the small

absolute number but the nonetheless proportionate overrepresentation of students assigned to community clinics sites in the study sample, suggests that bias based on practice site selection is unlikely. Similarly, the absence of demonstrable differences between students included in the study sample and the class at large, with respect to a variety of student performance measures, suggests that bias based on student selection is also unlikely. Finally, care was taken to specifically instruct participating preceptors to administer the surveys to three consecutive patients during the course of a single

clinical session. While we cannot assure that this was done, the receipt of three patient surveys for 31 students and 2 patient surveys for 14 students follows a pattern consistent with the expected clinical activity of our students during a single teaching session and is thus somewhat reassuring.⁸

While our student sample appears to be broadly representative, the patient sample in this study is relatively small. Clearly, having only two to three patient responses is not sufficient to reliably measure patient satisfaction regarding individual students. With the exception of the community clinics site cluster, however, the number of patient responses available for each site cluster appears sufficient to assure their reliability in reflecting an aggregate of patient perceptions for that particular site cluster.

The data we report here appear to confirm, and perhaps extend, findings reported by DeVera-Sales et al, who found that 90% of responding patients participating in a block rotation format family medicine clerkship at the University of Missouri, Columbia, did not object to medical student participation in their care.⁷ Indeed, our patients appear to be more enthusiastic about participating in medical student education, despite a higher level of reported direct student involvement in their care.

One might speculate that the longitudinal format of our clerkship allows for the development of more positive patient perceptions. Given that our surveys were collected during the latter portion of this year-long experience, the higher levels of patient satisfaction may reflect greater levels of student comfort, competence, and efficiency achieved within the context of a longitudinal educational format. In any event, we believe this

study provides substantial evidence to prospective ambulatory clinical faculty and other interested parties that participating in medical student education will likely not be negatively perceived and may, in fact, actually enhance patient satisfaction.

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