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WEB PAPER

'They've all got to learn'. Medical students' learning from patients in ambulatory (outpatient and general practice) consultations

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Abstract

Background: The dynamics of effective teaching consultations need to be better understood.
Aim: Find from medical students, patients and doctors how to optimize learning in ambulatory consultations.
Methods: Patients and students independently gave semi-structured exit interviews after 25 ambulatory teaching consultations during a clinical attachment set up experimentally to strengthen students' ambulatory learning. The results of an abbreviated grounded theory analysis were checked in three focus group discussions with teachers and students.
Results: Patients and students identified strongly with one another and benefited from teaching consultations in parallel ways yet defaulted to passive roles. Patients deferred to professional expertize whilst students were uncertain what was expected of them, feared harming patients and feared being showed up as ignorant. The educational value of consultations was determined by doctors' ability to promote student–patient interaction.
Conclusions: In the most effective teaching consultations, doctors promoted a level of participation that realized patients' and students' mutual sense of responsibility by orientating them to one another, creating conditions for them to interact, promoting and regulating discourse, helping students to perform practical tasks and debriefing them afterwards. Those broad conclusions translate into 18 practical recommendations for supervising a medical student in an outpatient clinic or surgery.

Introduction

The importance of students learning from patients in the presence of doctors is generally accepted (Spencer et al. 2000). Until recently, research and consensus statements were primarily concerned with the doctor as teacher (Prideaux et al. 2000) but there is increasing acknowledgement of patients' and students' rights and responsibilities (Wykurz 1999; Scherpbier 2006). At the same time, teaching is moving, along with clinical care, from hospital wards to ambulatory settings – a term used in this article to mean hospital outpatient clinics and general practice surgeries (Stewart et al. 2005). The educational benefits of learning from patients have been clearly defined (Kelly & Wykurz 1998; Spencer et al. 2000) and there is evidence that the benefit can be mutual, provided clinicians and students behave ethically and sensitively towards one another (Simons et al. 1989; King et al. 1992; Lynoe et al. 1998; Nicum & Karoo 1998; Hartley et al. 1999; O'Flynn et al. 1999; Stacy & Spencer 1999; Thomas et al. 1999; Spencer et al. 2000; Wykurz & Kelly 2002; Coldicott et al. 2003; Jackson et al. 2003; Walters et al. 2003). Most evidence regarding the effect of students on patients has come from interactions in which patients were specifically trained and often remunerated (Gruppen et al. 1996; Kelly & Wykurz 1998; Lynoe et al. 1998; Hartley et al. 1999; Hendry et al. 1999; Stacy & Spencer 1999; Thomas et al. 1999; Dammers et al. 2001; Jackson et al. 2003; Walters et al. 2003), although patients involved opportunistically have also held generally positive attitudes towards students' learning (King et al. 1992; Lynoe et al. 1998). Teachers can also benefit from patient-based education (Freeman et al. 1995; Hartley et al. 1999). Bleakley and Bligh have recently called for a reorientation of the relationship between patient, student and teacher to enhance collaboration between student and patient with the expert doctor as a resource (Bleakley & Bligh 2008).

Practice points

Ambulatory learning is most effective when teachers:

- Create a warm climate for students and patients.
- Tell students what they expect of them and orientate them to individual consultations.
- Promote direct communication between student and patient, for example by the student interviewing the patient before the doctor.
- Give students an authentic role in the process of caring for the patient.
- Debrief students at the end.

Empirical research has progressed from simply identifying students' learning outcomes (Gruppen et al. 1993; Harrell et al. 1993; Davis & Dent 1994) to identifying links between teachers' behaviour or the design of curricula and learning outcomes (Branch et al. 1993; Murray et al. 1999;

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Prince et al. 2000; Seabrook et al. 2000; Fernald et al. 2001; Coldicott et al. 2003; Stark 2003; van der Hem-Stokroos et al. 2003; Chumley et al. 2005; Jacobs et al. 2005; Prince et al. 2005; Dornan et al. 2006). However, the learning theory implicit in research hitherto has tended to assume a relatively simple relationship between teaching and learning whereas the relationship between clinician, patient and student has quite complex dynamics (Ratanawongsa et al. 2005). So, the best way of promoting learning in ambulatory settings needs to be clarified. We have previously explored medical students' workplace learning and defined supported participation as its core condition (Dornan et al. 2005a, b). In the research presented here, we have applied qualitative research method within an experimental design to explore the dynamics of supported participation in the ambulatory setting. Our specific research questions were: How do medical students learn from patients in ambulatory teaching consultations and how could their learning be enhanced?

Methods

Both Health Service and University Ethics Committees approved the research. Students and patients gave written consent and doctors gave verbal consent. The theoretical orientation of the research was towards situated learning, (Lave and Wenger 1991) a dominant contemporary theory that is concerned with the mediation of learning by social interaction between members of communities of practice. Once legitimized as a novice member of such a community, students learn by participating in its activities. By participating, they move centripetally within it and both they and the community change as a result. We have applied situated learning theory to medicine by developing an empirically grounded model of Experience Based Learning (Dornan et al. 2007). Since the approach chosen for this study was qualitative, we judged it theoretically appropriate for three clinical staff researchers and two medical student researchers, who were more or less familiar with the research context and could respond reflexively to the findings, to conduct the study, working as a team to challenge the preconceptions and biases of one another.

Context

The University of Manchester has an integrated, community oriented, problem-based undergraduate medical curriculum, which uses active learning methods to attain a defined set of competences. This research was conducted in one of its four main teaching hospitals, Hope Hospital, and a linked Salford general practice. Students at the end of year-3 were chosen because they were experienced enough ambulatory learners whilst being novice enough to be sensitive to their experiences. The study was conducted in the Salford Department of Endocrinology/diabetes which, as a predominantly ambulatory care specialty and the clinical base of the senior author, had a strong commitment to ambulatory practical education and could provide the requisite access to informative consultations. A general practice, whose doctors were highly rated as teachers, was chosen for similar reasons.

Study design

This was a single group, design-based research study (The Design-Based Research Collective 2003) of a complex intervention, which built on previous observational research in the same community of practice (Dornan et al. 2005a, 2007; Dornan 2006). It was conducted over a short period to allow in-depth observation of a deliberately small number of students, feedback of interim findings to them and their teachers, re-evaluation and validation of the findings. The study was conducted within a specially designed 4-week Special Study Component (SSC), when third-year-student study participants chose to learn endocrinology/diabetes in ambulatory settings.

The complex intervention. Students chose individual intended learning outcomes for the SSC and took part in an induction training exercise where they extracted information from a set of case notes, role played patient and doctor in an ambulatory consultation, and presented the case to a teacher to ensure they had the requisite skills to maximize clinical engagement. They met weekly as a group with the senior author and two senior student co-authors to guide their case report writing and had a weekly clinical teaching session with another teacher. Supported by the student researchers, the SSC students chose an average of three ambulatory learning opportunities per week from the hospital electronic learning management system (Dornan et al. 2004; 2005) and attended one general practice session each. Those clinical sessions lasted 2–4 h and involved one doctor and 1–2 students seeing 5–15 patients. Teachers supported students' learning, at first in their usual way, and then informed by the interim results of the study. Consecutive, unselected patients attended clinics and surgeries as normal.

Recruitment and participants. The intended intervention and its experimental nature were made known to all 100 year-3 students before they made their SSC choices. From the large number who applied, the lead researcher and an administrator purposively chose a sample of eight students who matched the gender and ethnic mix of the year group and had limited previous experience of endocrinology/diabetes. After giving informed consent, three general practitioners, six consultants and four specialist registrars conducted consultations that were available to be sampled during the study period, each consultation involving a different patient.

Evaluation

Data capture. Direct observation of consultations was judged too disruptive, so patients and students were interviewed at the end of consultations separately to identify differences in their perspectives. Doctors were not exit-interviewed because they could not break between consultations and the research questions did not primarily concern them. The semi-structured interviews were conducted by the

two student researchers and audio-taped. Initially, the researchers chose consultations opportunistically but later they did so purposively to ensure each student was adequately represented in the dataset and to enrich the evolving interpretation. The choice of doctor was dictated by the session the student was attending, and the choice of patient was dictated by the choice of doctor.

Analysis. To arrive at the richest possible interpretation, the researchers chose grounded theory method (Anonymous 1998). The need to feed day-by-day data analysis into the evolving interpretation, complete an interim analysis within 2 weeks, and finalize the analysis for respondent validation within 4 weeks precluded verbatim transcription so the student first and second authors and endocrinologist/educationalist lead author met several times each week to replay and analyse paired student and patient interviews. They challenged one another's interpretations, sought instances that did not fit their evolving interpretation, and referred back to previous interviews before writing an interpretive précis of each consultation. They jointly planned the next stage of purposive sampling and did not stop sampling until all five authors agreed theoretical saturation had been reached. The third author, a rheumatologist/educationalist, independently listened to all audio-taped materials, presented her interpretation naively to the first, second and fifth authors at the midpoint and end of the study, and critiqued their interpretation. The fourth author then reviewed the final interpretation with access to all written and audio materials. After 2 weeks, the research team fed back their evolving theory to student participants in one audio-taped group discussion, and to students and doctors together in another, the results of which fed into the evolving interpretation, which was finally validated by student respondents in an audio-taped group discussion at the end of the 4 weeks. The place of thematic and axial coding (Anonymous 1998) was taken by making written records of the discussions, which used fast-paced spoken interaction within the research team to arrive at a meta-interpretation of the whole dataset.

Results

No patient refused to have a student present in the consultation. Table 1 shows details of the 25 consultations. There were four major themes – patients' and students' reactions to teaching consultations, the dynamics between patient and student, and factors affecting the dynamics – and nine sub-themes. Box 1 presents a list of practical recommendations distilled from the following presentation of results.

Patient' reactions to teaching consultations

Patients generally liked to have students to be present and recognized 'we wouldn't have the doctors of today if we didn't have students listening in to what was going on'. Patients recognized that they exemplified diseases better than books did and could help students learn communication skills. They took on passive roles because they saw both doctor and student as more knowledgeable than themselves. The presence of a student could help them learn because 'the student was asking the doctor questions me and my mum might have been thinking of'. If their problem was a sensitive one, they would expect the doctor to let them choose though many would still allow a student to be present. No patient said the student's presence was detrimental to their consultation and many said they benefited, particularly emotionally as listed in Table 2, because '[students] give a bit of warmth to the consultation that you don't always get from doctors'. A student's presence could give patients what the research team characterized as a sense of personal validation; for example, a teenager said she felt adult and trustworthy, and an older adult respondent felt 'you're somebody not just a number'.

Box 1. Recommendations for supervising a medical student in an outpatient clinic or surgery.

- Regard students as people who are scared of you and patients as people who feel warm towards students.
- Be approachable and friendly, not dictatorial.
- Consider that students may be more comfortable attending in pairs.
- Tell them what to expect from you and what you expect of them.
- Obtain every patient's consent for a student to be present and ensure the student knows you have done so.
- Orientate students to patients before consultations begin.
- If time and space permit, have them interview patients on their own first.
- Brief them or give them a written template to guide their interview/examination.
- Arrange the furniture to make everybody feel included and promote good eye contact.
- Use your interactions with students to create a comfortable and relaxed climate for patients.
- Encourage direct verbal interaction with patients that makes students active participants in the consultation.
- Handle sensitive consultations carefully so you involve students to patients' benefit rather than harm.
- Have students perform any hands-on procedures they are capable of on your behalf.
- Use physical examination to help them connect with patients.
- Allow them to practice presenting cases.
- Find out, conversationally, their level of knowledge and meet their learning need.
- Help them understand your questions if they seem to have difficulty answering them.
- Debrief at the end, summarise, and reinforce take home messages.

Students' reactions to teaching consultations

Students wanted to see patients with the diseases they were studying; however, lack of confidence and fear of causing harm sometimes made it hard for them to learn as active participants. They were unaware patients generally held positive attitudes towards interacting with students, were unlikely to be harmed, and could even benefit from doing so. Students were apprehensive and uncertain what clinicians would expect of them; 'I do feel inhibited by the doctor and if I'm left alone with the patient then I'm more myself . . . If I have had a bad experience it's been with the doctor not the patient'. They were more comfortable, confident and inclined to participate if the patient had a problem they were familiar with and if the doctor 'taught what to expect, what your level of involvement would be'. The initial training role play made students more confident to

Table 1. Consultations analysed.

	Student(s)		Patient		Doctor	
Consultation No.	Gender(s)	Ethnicity	Gender	Age[a]	Gender	Grade
1	Female	Caucasian	Female	Young adult	Female	Consultant
2	Female	Minority	Male	Older aged	Male	Consultant
3	Female	Minority	Male	Middle aged	Male	Consultant
4	Female	Caucasian	Female	Middle aged	Female	General practitioner
5	Female	Caucasian	Female	Older aged	Female	General practitioner
6	Female	Minority	Female	Older aged	Female	General practitioner
7	Female	Minority	Female	Middle aged	Male	Consultant
8	Female	Caucasian	Female	Middle aged	Male	Consultant
9	Female	Caucasian	Male	Middle aged	Male/Female	Consultant/Specialist registrar
10	Female	Caucasian	Female	Middle aged	Male	Consultant
11	Female	Caucasian	Female	Young adult	Female	Consultant
12	Female	Caucasian	Male	Middle aged	Male	Specialist registrar
13	Female	Caucasian	Female	Middle aged	Female	Consultant
14	Male	Minority	Female	Middle aged	Male	Consultant
15	Male	Minority	Male	Middle aged	Male	Consultant
16	Male/Female	Caucasian/Minority	Female	Middle aged	Male	Specialist registrar
17	Male	Minority	Male	Middle aged	Male	Consultant
18	Male	Minority	Male	Older aged	Female	General practitioner
19	Female	Caucasian	Female	Middle aged	Female	General practitioner
20	Female/Female	Caucasian/Caucasian	Male	Older aged	Male	Consultant
21	Female/Female	Caucasian/Caucasian	Male	Middle aged	Male	Consultant
22	Male	Caucasian	Male	Middle aged	Male	Specialist registrar
23	Female	Minority	Male	Middle aged	Male	Specialist registrar
24	Female	Caucasian	Female	Young adult	Female	Consultant
25	Female	Caucasian	Female	Young adult	Male	Consultant

Notes: [a]Young adult – up to 30, Middle aged up to 70, Older person – 70 upwards.

Table 2. Benefits to students and patients of teaching consultations.

	Students	Patients
Direct emotional benefits	Identified positively with patients/students Felt personally validated Felt satisfied	
	Increased their confidence	
		Felt: • Cared for • Greater comfort • Less anxiety and boredom
Indirect emotional benefits		Experienced the rewards of: • Helping • Training future doctors • Giving something back
Practical benefits	Obtained materials for obligatory case reports	Had more thorough/longer consultations
Cognitive benefits	• Saw exemplars of, and personified, things learned about in theory • Were helped to remember • Learned about the personal impact of disease	
		Became better informed

participate and they benefited from participating as listed in Table 2. Apart from cognitive benefits, interacting with patients motivated them, satisfied them, and made them more confident to assert their learning needs. Patients' sense of personal validation was reciprocated by students finding those same patients willing to interact with them.

The dynamics between student and patient

Two themes captured the dynamics between student and patient: identification and participation.

Identification. Patients identified with students even – and perhaps especially – when consultations involved little direct

interaction between them. Older patients identified parentally with students; 'I could tell she was a bit nervous.. and me being older than her.. she could be my daughter'. Younger patients identified as fellow students – 'Its nice coz I'm a student myself'. Medical students identified with patients reciprocally; however, they recognized some danger in, for example, identifying strongly as a child with an older patient who had the same illness as one of their parents because it made them want to comfort rather than behave like a doctor; 'I don't know if in someway it compromises the doctor role. Am I too worried about, almost, a too human aspect and then I'm not going to be worried about the more kind a scientific stuff?'

Participation. Students wanted to participate in the care of patients but had to be brave to do so because they feared showing themselves up as inadequate. They took on the roles we have described elsewhere (Dornan et al. 2007), which ranged from passive observer to actor-in-performance (partially fulfilling the role of a doctor). They generally learned more as an actor than as an observer, though short periods of passive observation could give time for thought and relieve pressure on them, for example when patients had diseases they knew little about, serious ones, or sensitive ones; 'I wouldn't want to ask questions myself in that sort of situation because I'd be worried with someone who's anxious and depressed and not knowing the full history that I might put my foot in it almost and sort of say something that would be upsetting and distressing'.

Factors affecting the educational dynamics

Arrangement of the room. Such a simple thing as the arrangement of chairs affected students' confidence, comfort and level of interaction; being able to make eye contact with patient and doctor helped them feel involved and ask questions whilst sitting or standing in a corner inhibited them.

Presence of another student. Some students liked to have a second student present in the consultation; 'It was good for me because if I didn't know an answer or something I could kind of rely on the other student perhaps to have an answer or at least you know make me feel . . . . . if you don't know it and they don't know it you feel a bit better about it – not knowing the answer to the question' whilst others preferred 'to be on my own, I think I'd get to do more, get more from it if I was just there by myself'.

Seeing a patient without a doctor present. Seeing patients before the consultation proper challenged students to participate as a doctor-to-be; for one typical respondent it was 'the most rewarding thing – speaking to patients on my own and then actually feeling like I'd contributed to why they were there and to the job of the doctor and I'd actually really helped'. They could explore how patients' lives were affected by disease in a way that would have been hard with a doctor present. They were not just relieved of the fear of failing in the role of interviewer but could experience what it felt like to be a doctor because 'as soon as the doctor goes out of the room in the patient's eyes you become the doctor and therefore you act like the doctor despite the fact.. you don't know what you're doing'.

Doctors' exercise of control. By default, doctors had control over the educational dynamics, a finding that became clear after two informative events. In one, a patient's relentless questioning reduced the doctor to passivity and left the student identifying with the doctor rather than the patient. In another, the educational dynamics were profoundly influenced by clinic nurses exercising control over student, doctor and patient. Normally, however, students and patients had little control so even small changes in the way doctors behaved had a powerful effect on students' participation. Once this finding was made known at the study midpoint, students began to exercise more control and doctors were readier to allow them, to the benefit of students' learning.

Before the consultation. Doctors could promote participation by orientating a student to a patient's disease, identifying the student's level of knowledge about it and their learning needs, helping them contextualize existing knowledge to the patient, providing a scaffolding for new learning, and establishing how ready they were to take on an active role; 'I felt that with my consultation it was more like a partnership between me and the doctor and we talked about it quite a lot before a patient came in, more than we normally do'. The lack of such an orientation could disable participation by leaving students anxious, uncertain what was expected of them, and afraid of being shown up.

During the consultation. Students learned best when approachable, encouraging and inclusive doctors fostered the type of positive three-way interaction that created a sense of partnership; 'Just because you know it was me that was in control of the examination I was the one speaking to the patient and at some points obviously the doctor had to come in where I wasn't quite doing it correctly but on the whole I felt it was more kind of my examination'. Such a climate helped students understand unfamiliar subject matter, relax and add warmth to patients' experiences. Teachers could make consultations safer for the other parties by recognizing 'its literally something that you just don't know, or haven't done, then its OK and they can help you through it, but if they don't I think that I'd feel very lost . . . . I'd find it quite a stressful situation. You sort of almost need to be in an environment where it's OK to ask for help'. They could also help students perform physical examinations and procedures. A doctor's ability to make students active participants was most apparent in sensitive consultations.

Less approachable doctors undermined students' confidence and rendered them passive; 'But you do sort of feel that you're standing in a corner and you shouldn't move and it's a bit uncomfortable . . .' even warm doctors disempowered the students by leaving it unclear whether patients had consented to their presence, an extremely sensitive issue for students who, despite patients' lack of expressed concern, repeatedly said patients had been given insufficient explanation about the presence of a student and opportunity to decline it. Well

intentioned doctors could also be disempowering by letting their own familiarity with patients exclude students from the discourse and even by teaching at the expense of direct interaction between student and patient. Although doctors could protect students and patients from harming one another, they more often prevented the two parties benefiting one another, as was exemplified when a student and patient began a fruitful interaction only when the doctor was called away.

After the consultation. Students asked for debriefs at the end of consultations early in the study and responded appreciatively once doctors had been told of their value and started providing them later on.

Discussion

Principal findings and meaning

It is striking how, having set aside assumptions about the role of a doctor and focused on the roles of patient and student within the doctor–patient–medical student triad, the findings still centred on the role of doctor; however, the doctor's role was now reframed as a leader who helped patients and students find ways of relating to one another effectively rather than conveyor of subject matter. The most effective teachers turned students' fear of demonstrating inadequacy in front of them into active participation to the advantage of patients. This resulted in students relating to patients as apprentice doctors rather than children or siblings. The set of recommendations in Box 1 lists effective teaching behaviours and Table 2 shows how patients as well as students can benefit from observing those recommendations.

Strengths and limitations

The greatest strength of this research was its methodological complexity and rigour, coupling an experimental instructional design with a qualitative evaluation that sought consensus and disconfirmatory instances, and included triangulation, independent review, constant comparison and respondent validation. The ease with which theoretical saturation was reached, the plausibility of the theory, its fit to contemporary research on clinical learning and its ability to make practically useful predictions also validate the findings. Another strength was the central role taken by students and patients in the research, though this might have led patients to express unusually positive attitudes towards students. We do not think that had a major effect because we specifically asked patients whether the research context had led them to be unduly positive and could find no ambivalence in their denials. The small sample of participants restricted to one phase of one undergraduate curriculum in a specialist unit that was positively disposed towards education is a limitation, although the lack of generalizability inherent in using a small number of respondents was offset by the opportunity to observe people with whose individual behaviour the researchers became increasingly familiar in 25 different permutations (as shown in Table 1) involving both primary and secondary care settings. The analytical methods were too rigorous to be applied to a substantially larger sample, and the fact the study achieved saturation indicates little would have been gained by studying more participants. The number of male participants was small, though it reflected the gender mix of the peer group, and we allowed for it by sampling purposively and scrutinizing students' and patients' narratives for a gender effect without finding one. Moreover, the female participants had a very wide spectrum of learning styles.

Relation to other publications

The importance of a warm human climate (Roff 2005) and humanistic teaching behaviours (Fernald et al. 2001; Mann et al. 2001), and teachers' reluctance to promote the active participation (O'Neill et al. 2006) that is so important to students (van der Hem-Stokroos et al. 2003; Dornan et al. 2005) and so possible to achieve (Woolliscroft 2002) are well known. Nonetheless, conclusions arrived at by linking students' learning outcomes to the simultaneous inputs of students, patients and teachers within the complex adaptive system of client-centred clinical education are, at best, sparse (Scherpbier 2006). One exception is a recent publication, which showed how students' learning from dying patients was modulated by participation in a palliative care team (Ratanawongsa et al. 2005). From an education theory perspective, Bleakley and Bligh (2008) anticipated the findings of this research with remarkable clarity when they wrote about the patients and students engaging in 'collaborative knowledge production'. They also anticipated our findings that even well-intentioned doctors could be obstacles to student learning. Our research provides some practical ways of achieving the 'patient-based curriculum' they advocate, where students learn to read patients' narratives in both lay and clinical terms and construct their identities as doctors 'in the mirror of patients'.

Future research

Hypothesis-generating research like this is as good as the applications to which it is put. The logistics of ambulatory learning have been most intensively researched in the USA (Usatine et al. 2000), so a key questions is how learning in the patient–student–doctor triad can most cost-effectively be optimized in the European context and how instruction can best be designed for the many ambulatory contexts in which non-US medical students learn. Hypotheses derived from this research could be tested in experimental interventions targeting students, patients, doctors or permutations of the three of them.

Declaration of interest: The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

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these data whilst medical students, in fulfilment of the requirements of the Manchester BM programme.

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