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Does hearing the patient perspective improve consultation skills in examinations? An exploratory randomized controlled trial in medical undergraduate education

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ABSTRACT

Purpose: Medical education increasingly includes patient perspectives, but few studies look at the impact on students’ proficiency in standard examinations. We explored students’ exam performance after viewing video of patients’ experiences.

Methods: Eighty-eight medical students were randomized to one of two e-learning modules. The experimental group saw video clips of patients describing their colposcopy, while the control group viewed a clinician describing the procedure. Students then completed a Multiple Choice Questionnaire (MCQ) and were assessed by a blinded clinical examiner in an Objective Structured Clinical Examination (OSCE) with a blinded simulated patient (SP). The SP scored students using the Doctors’ Interpersonal Skills Questionnaire (DISQ). Students rated the module’s effect on their skills and confidence. Regression analyses were used to compare the effect of the two modules on these outcomes, adjusting for gender and graduate entry.

Results: The experimental group performed better in the OSCE than the control group (odds ratio 2.7 [95%CI 1.2–6.1]; \( p = 0.016 \)). They also reported significantly more confidence in key areas, including comfort with patients’ emotions (odds ratio 6.4 [95%CI 2.7–14.9]; \( p < 0.0005 \)). There were no other significant differences.

Conclusion: Teaching that included recorded elements of real patient experience significantly improved students’ examination performance and confidence.

Introduction

Including the patient or carer voice in the education of healthcare professionals is increasingly considered to be important. In recent years, “patient and public involvement” (PPI) has been specifically recommended by the UK bodies that govern education in this field (GMC 2009a, 2009b; NMC 2010; HCPC 2014). The theoretical underpinnings of PPI in education describe a spectrum of involvement, ranging from relatively passive patients to patient-teachers who have extensive contact with students, autonomy in deciding the curriculum, and training in how to teach (Towle et al. 2010). Often teaching takes place at a level mid-way through this spectrum, where patients come in person to describe their experience or illness story for students as part of an existing clinical course (Jain et al. 2013; Braeckman et al. 2014). Research has repeatedly shown that interacting with patients and carers, and hearing their stories, can improve students’ knowledge, attitude, and confidence (Morgan & Jones 2009; Jha et al. 2010; Spencer et al. 2011). There is evidence that involving real patients may be better for teaching communication than involving simulated patients (SPs) (Clever et al. 2011). Much of the research done to date involves very complex interventions at the higher end of the spectrum of involvement, for example, where patients and carers may discuss their story with students in groups or over time, or offer active feedback on communication skills (Jha et al. 2009). It is not always clear which elements of a patient/carer educational intervention might affect student outcomes.

Practice points

- There is increasing emphasis on including patient voices in medical teaching.
- It can be difficult to measure the impact on students’ education of hearing patient perspectives.
- This exploratory trial compared the examination results of students who had heard patient experiences with a control group who had not.
- Students in the experimental (“patient experience”) group performed significantly better in clinical exams and reported more confidence in responding to patients’ emotions.

In addition, although face-to-face teaching led by patients may be powerful, it is not always feasible or ethical to ask patients to describe what may be unpleasant or upsetting experiences to successive cohorts of clinicians in training (Weber et al. 2011; Snow 2015). Video of patients talking about their experiences falls toward the lower end of spectrum of involvement; although the patients’ reflections are unscripted they are selected by faculty and there is no scope for patient–student interaction. Nevertheless, it may be a valuable way to present the patient’s perspective without encountering these practical and ethical difficulties.

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Our study explored the effect on student performance of viewing video of untrained laywomen simply describing their experiences of investigations for cervical abnormalities.

Methods

Recruitment and randomization of participants

University of Oxford medical students in their fifth (penultimate) year during 2014–2015 were offered the opportunity to participate in this study. There were no exclusion criteria. Five cohorts of students were recruited during the year. The study took place in the introductory two-week lecture session at the start of their obstetrics and gynecology course, before they had gained any clinical experience. Most of those who did not take part were unable to do so because they had chosen to take up short-term clinical training opportunities overseas. Within each cohort, consenting participants were randomized by a researcher (RS) consecutively assigning them, as they arrived to the lecture room, letter A or B, corresponding to one of two educational modules. The researcher had not met the students before and had no knowledge of their exam performance prior to the day of the study. Students knew that they had been randomized to module “A” or “B”, but were not told how these modules differed. The researcher played no further part in their learning or assessment.

Module content

The modules were both online interactive programs following two patients through the diagnosis and management of pre-cancerous changes in the cervix. Both modules covered the NHS cervical screening call and re-call program, the natural history of cervical cancer, and the diagnosis and management of pre-cancerous changes. Information was conveyed through video clips, images, and text. The modules were expected to take 20 min to complete but no time limit was imposed, and students could watch the videos multiple times if they wished.

The modules contained identical interactive online written and visual content about cervical screening and the clinical management of cervical abnormalities. Each one also included a series of video clips featuring case histories of two patients. In the control group’s module (“doctor module”), the clips showed a female doctor recounting the patients’ case histories and outlining the relevant procedures from a medical viewpoint. In the experimental group (“patient module”), the clips were of the two patients themselves describing their personal experience of the procedures. Thus, the modules were identical apart from the perspectives given in the video clips.

The patient experiences were taken from the University of Oxford’s Health Experiences Research Group (HERG) archive. These interviews were originally collected as part of a research project looking at patient experiences. HERG’s recruitment and ethical processes can be found with their interview methodology on the HealthTalk website (Healthtalk 2014). Both modules offered the same clinical information, ensuring that students would be given all the facts on which they would later be tested. However, in the patient clips, women who had experienced colposcopy spoke about their initial fears and concerns, described personal pain responses and what that meant for their daily life and ability to work, and talked about post-procedural issues such as the emotional strain of waiting for results. By contrast, the “doctor module” offered textbook information about common complications such as pain “of varying severity”, and provided general recommendations for returning to work and resumption of sexual activity. Both modules included information on the time it took to process and deliver results. The modules were developed following a pilot with an earlier cohort of students to ensure ease of use and educational value. Example sections of each module can be seen in Figure 1. The full modules are available on request from the authors.

Data collection

Since the aim of the study was to assess students’ performance in a situation as close as possible to their normal examinations, participants were required to demonstrate their knowledge via a Multiple Choice Questionnaire (MCQ) and an Objective Structured Clinical Examination (OSCE), the main summative methods in use within the medical school. Immediately after taking the module, therefore, both groups were given a 20-item untimed MCQ testing their knowledge of the module content. They then took an OSCE, written by a gynecologist with six years of exam-setting experience, in which they were asked to engage in a consultation with a SP, answering the patient’s questions about colposcopy (Figure 2). The SP was played by professional actors with experience in medical role play. Assessments were done in the rooms where students would normally take their end-of-rotation examinations. Each OSCE was marked on a standard four-point scale (Fail/Borderline/Clear Pass/High Pass) by a clinical examiner. Scores were based on the students’ ability to explore the patient’s concerns, explain accurately what a colposcopy is and how it is performed, and answer the patient’s questions about time-scales for receiving results. The SP scored students on a five-point scale (Poor/Fair/Good/Very Good/Excellent) using the Doctors’ Interpersonal Skills Questionnaire (DISQ), adapted to reference “students” rather than “doctors”. The DISQ is a reliable and valid tool for assessing

Control group:
Video clip: Doctor describing a Large Loop Excision of the Transformation Zone (LLETZ)
Doctor:
“The woman is placed in the lithotomy position. Once in position, a local anaesthetic is applied to her cervix. When this has had time to take effect, an electrosurgical loop is passed through her cervix to remove the abnormal cells.”

Experimental group:
Video clip: Patient Juliette describing LLETZ
Juliette:
“So what they did there and then was, they used, they did a treatment called LLETZ, and it’s basically they pass a hot wire loop through your cervix to remove the abnormal cells. It does sound quite scary but it’s not. You actually don’t feel it because you get anaesthetised before. They just pop an injection in your cervix which you can’t feel either. I was really worried about that, I thought I might feel that, but didn’t feel that at all. I think the worst thing is just having your legs up on the stirrups and having to be in that uncomfortable position, I found that the worst part about the whole treatment.”

Figure 1. Example section from modules.
communications competence in clinical consultations, which has been tested with real patients (Burford et al. 2011). Examiners and SPs were all blinded to which module students had been assigned. Due to practical considerations, it was not always possible to have the same clinical examiners and SPs examining each cohort. Each time a cohort took part, three identical OSCE stations were provided to ensure speedy throughput of students. Over the five sessions, six examiners and six SPs took part.

After completing the module and assessments, students were asked to complete a questionnaire about their experience of taking the module. This used a five-point scale (not at all/a little/somewhat/quite a bit/a lot) to score whether they felt the module increased their knowledge of the topic, improved their ability to discuss cervical screening, improved their understanding of how to communicate with patients, increased their comfort level in discussing the topic with patients, and increased their ability to respond to patients’ emotions.

Data on the participants’ gender and cohort were recorded, alongside their overall OSCE scores, DISQ scores, and their self-evaluations. Some students were “graduate entry”, meaning that they had entered medical school having taken a first degree in a different discipline, and this was also recorded. Since this was an exploratory trial, we looked at a range of outcomes, specifically differences between the groups on their DISQ, MCQ and OSCE scores, and students’ self-evaluation.

Data analysis
Consistent with work by Greco et al., the 12 DISQ scores were averaged to calculate an overall “Interpersonal Skills Index” (ISI), expressed as a percentage (Greco et al. 2002). The ISI and students’ MCQ scores were normally distributed. OSCE scores and students’ evaluation scores were treated as ordinal variables.

Within the literature on patient–clinician interaction, there is evidence that male and female healthcare professionals interact with patients in slightly different ways, with women sometimes scoring more highly on empathy, patient-centeredness, and communication (Wahlqvist et al. 2010; Cuddy et al. 2011; Fields et al. 2011). In addition, although the students in our study were very close in age, a minority had come to medical school having completed a first degree in a different subject. Anecdotal evidence suggests that these “graduate entry” students may have a more mature communication style. We therefore decided to
adjust for gender and graduate entry in our analyses of outcome measures related to students’ performance (i.e. ISI and OSCE scores).

We explored associations between group (experimental vs. control) and MCQ and ISI scores using linear regression. For the OSCE and evaluation scores, we performed proportional odds ordinal regression analyses to obtain the odds ratio for a one point improvement in score associated with the experimental group compared to the control group. We used IBM SPSS Statistics 22 and Microsoft Excel 2010 to carry out the analyses.

Results

Figure 3 shows the flow of participants from eligibility assessment to analysis. From the 135 students in five cohorts who were asked to participate, 88 (65%) individual students agreed to take part. All participants completed their allocated learning module and MCQ, but one withdrew before taking part in the OSCE and self-evaluation. Students from the control and experimental groups were evenly distributed across examiners ($p > 0.2$).

Significant differences were found between the two groups' OSCE scores (see Table 1). Being in the experimental ("patient module") group meant that a student was 2.8 times more likely to score an extra point in their clinical exam than if they had been in the control ("doctor module") group.

The experimental group also assessed themselves as significantly more confident in their understanding of how to communicate with patients about cervical screening, their own comfort in discussing screening, and their comfort in responding to patients’ emotional reactions (see Table 2).

There were no significant differences between the experimental and control group on any other outcome measures. That is, ISI and MCQ scores, student-perceptions of increased knowledge of cervical screening, and ability to discuss it with patients. Complete results are shown in Tables 1 and 2.

Discussion

Students who viewed the patient experience video clips performed significantly better in their clinical exam, and reported feeling significantly more comfort and confidence in key communication skills. It seems likely that viewing the patient videos did not distract students from the other information in the module, since the two groups scored the same on the written assessment, a test of memory and procedures rather than communications about, or emotional responses to, those procedures.

There were also no significant differences between the two groups’ scores on the DISQ Interpersonal Skills Index, which could be a result of consistent communications teaching on other parts of the overall course.

Patient involvement in healthcare education has partly been driven by the theory that including true patient experience makes teaching more relevant, thus preparing students to cope with the complexity of real-life doctor/patient encounters rather than simply learning facts and textbook scenarios (Morgan & Jones 2009). This may help to explain the experimental group’s improved OSCE performance. First, they may have entered the exam feeling more emotionally prepared than their peers. These students reported significantly higher levels of comfort with emotions, having had the chance to hear and reflect on real patients’ concerns. This opportunity is perhaps especially valuable for interactions around colposcopy, which students

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**Figure 3.** Flow of participants from eligibility assessment to analysis.
may find difficult because of the sensitivity of the topic and potential for embarrassment. This emotional preparedness, while it made no difference to students' written exam results, may have allowed the experimental group to perform at a higher level in their OSCE clinical assessment.

Second, students in the experimental group may have felt more able to communicate information about colposcopy because they had heard patients' priorities around this specific procedure. In this instance, these included practical issues arising from post-procedural pain and bleeding, and the impact of waiting for results. Familiarity with these facts may explain this group's significantly higher confidence in 'ability to communicate' with patients, and their feelings of comfort discussing the issues around colposcopy.

A third factor could be that hearing how the women talked about their bodies and the terms they used may have helped the experimental group to use appropriate language during the consultation scenario.

In summary, hearing real patients describing what mattered to them and what happened before, during, and after colposcopy seems to have prepared students more adequately for a face-to-face encounter than standard teaching. Further research is needed to understand the mechanisms by which this occurs, and whether this improvement translates to improved experience for patients in genuine clinical encounters.

**Limitations**

There are several limitations in the design of this exploratory trial. In particular, Oxford has a traditional six-year course in which students have regular patient contact only in the final three years of clinical teaching. This differs from many other medical schools, which have more interactive patient contact throughout the course. Therefore, the effect of hearing real patient stories may have a greater impact for Oxford students, who in year 5 would have had only 12–18 months' contact with patients. Students at schools with more developed patient tutor programs might also respond in a different way.
Participation was voluntary and it is possible that the absent students might have responded differently to the modules than their peers.

The topic, an intimate procedure for further investigation for cancer, is a sensitive one; other kinds of patient accounts might have had less impact on the students.

Students were examined immediately after being exposed to the online modules, meaning that they were unable to supplement learning between taking the module and being assessed. However, we cannot say whether the results we found would hold true over a longer period between learning and testing. In addition, for this exploratory trial, numbers of participants were relatively low due to practical constraints; a larger sample might be needed to detect possible differences in the ISI.

Despite using a relatively standardized intervention, this study is not free from many of the problems encountered by larger RCTs in education (Morrison 2001). Students’ interactions with video clips will have been subject to individual variation that we were not able to record, and it is not possible to completely standardize exam conditions in OSCEs.

Finally, actors who simulate a patient scenario again and again may not respond to the students’ interpersonal skills in the same way as women facing a real-life one-off consultation about an unfamiliar procedure. The DISQ questionnaire has been validated with real patients, but not specifically with patients facing investigation for possible cancer. It is therefore possible that in a real-world scenario, patients might rate students differently.

Conclusions

Using videos of real patients’ experience embedded within more traditional teaching materials is at lower end of the involvement spectrum, but even this level may improve students’ confidence and performance in examined clinical consultations. Since there are ethical and resource considerations involved in asking real patients to repeatedly recount personal experiences “live” as part of medical education, recorded patient interviews which are proven to benefit students’ performance may provide a more acceptable alternative. Future work is required to explore whether our results can be replicated in different topic areas, over longer periods of time, with larger groups of students, and with students who have had different styles of general teaching. However, this is an important step in measuring the impact of patient voice and perspectives in the education of healthcare professionals.

Glossary

DISQ (Doctors’ Interpersonal Skills Questionnaire): A 12-question five-point scale developed to assess medics’ communication skills (Burford et al. 2011).

ISI (Interpersonal Skills Index): An average DISQ score expressed as a percentage (Greco et al. 2002).

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Ethical approval

This study was reviewed and approved by the University of Oxford’s Central University Research Ethics Committee.

Disclosure statement

The authors report no declarations of interest.

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Rosamund Snow, PhD, is a service-user researcher with a particular interest in how patient voice and experience can best contribute to medical education.

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All authors revised the final drafts and approved the final manuscript for submission. All authors agreed to be accountable for all aspects of the work.

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