Hi-fidelity human simulation

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Summary: Using trained actors to simulate doctors in difficulty is a cost-effective communication skills teaching tool that can be enhanced by techniques which are familiar to hi-fidelity electronic simulation.

Background: Evidence indicates that simulation has radically changed medical training and is set to continue to do so in the future.

Context: The branch of simulation that sees actors playing a role in training and assessment is well developed. Typically actors have only been used to play the patient.

Innovation: This innovation in communication skills teaching sees actors playing doctors (specifically GP trainees) to enhance the continuing professional development of established GP trainers.

Implications: By using actors, the scenarios can be played up or down in order to challenge participants and maximise their learning. More research is needed to develop this approach further.

Introduction

The use of simulation in medical education dates back to the 1970's, when 'Harvey' the cardiology patient simulator was demonstrated to be an effective tool for teaching and assessing bedside cardiovascular examination skills in both undergraduate and

postgraduate training programmes.[1,2] Rapid advances in simulator technology as well as ethical concerns over the growing number of junior doctors needing to practise on patients has led to a sea-change in the approach used to teach clinical and manual surgical skills.[3]

In 2005 a Best Evidence Medical Education (BEME) systematic review was undertaken by Issenberg and colleagues,[4] which considered the features and uses of hi-fidelity medical education simulation and its link to effective learning. The reviewers concluded that hi-fidelity medical simulations were educationally effective and that simulation-based education complemented traditional medical education in patient care settings. The evidence also suggested that during a simulation, learning is facilitated through the provision of:

- effective feedback;
- repeated practice of the task;
- scaled difficulty of the task;
- opportunity to try multiple learning strategies;
- clinical variation;
- a controlled learning environment, and
- individualised learning.

The technology available today has led to the development and use of hi-fidelity computer-based electronic simulation in most medical specialties [5,6,7] and as a means of skills assessment.[8] Interaction with electronic simulators has also been found to enhance the communication skills of nurses[9] and other clinicians. In this article an approach will be described which made use of hi-fidelity human simulators

to support GP trainers, in order to enhance their communication competence when dealing with trainees in difficulty.

Description of the innovation

A series of scenarios were written by a team of senior educators from the Kent, Surrey and Sussex and Wessex Deaneries. The scenarios covered common events which have been found to be typical of underperformance in GP trainees and were based on the experience of the writing team. Funding for a pilot training event was secured by the author and five actors were invited to take part in developing a method.[10]

The 'simulated GP trainees' attended the Wessex Deanery experienced trainers course, where each worked with small groups of experienced trainers to explore four scenarios. The six to eight trainers worked in a 'fishbowl' arrangement, with one trainer and a simulated GP trainee at the centre. The groups were facilitated by the author and experienced GP educators. A specimen scenario is given in the box below.

Specimen Scenario

Simulated trainee name: Dr Smith
Dr Smith is a GP registrar (GPST3) and has been working in the practice for 2 months. Having previously trained in general medicine, Dr Smith decided that the career opportunities in general practice were more numerous than those in general medicine, and so changed training specialty from medicine to general practice. Dr Smith's career goal is to become a 'GP with a special interest' (GPwSI).

Your approach to general practice is very medical; that is to say that there is a diagnosis for every illness presented and you are unhappy to let patients go without many investigations to confirm a diagnosis. If the first batch of investigations does not reveal a diagnosis, you do another batch.

Your surgeries are full of patients that you have already seen and are currently investigating. You are unhappy if you do not follow up patients, unless you have made a confirmed diagnosis. When sitting in on the surgeries of other GPs in the practice, you feel that some are not very thorough, and you have often heard them say 'I do not know what you have got but I am sure it is not serious.' Professionally you do not feel this is good practice, and you are considering whether you need to discuss their poor diagnostic skills and lack of attention to detail with your trainer or the GP Programme Director.

You have heard from the staff that the patients like you and consider you to be a very thorough doctor. You are just about to have a tutorial and are going to mention your concerns during it.

Trainer: Dr Jones

Your GP registrar, who has come from a general medical background, has been with you for 2 months. Dr Smith is currently on 15 minute appointments, but you have noticed the same patients seem to be filling Dr Smith's surgeries. In addition you have also noticed that Dr Smith is doing a vast number of investigations on the patients, some of which you have never heard. In your experience, this is many more than previous trainees at this stage of their training.

You are just about to start a tutorial and are going to bring up your concerns up with Dr Smith.

The 'hi-fidelity' nature of this human simulation has been achieved by using the skills

of the actors in five ways:

1. Play, pause and continue

2. Play, pause and rewind

3. Turn up or down

4. Tune in or out

5. Enhanced feedback from the simulated trainee, in and out of role

Play, pause and continue

Using a familiar meeting, such as a tutorial, allows the trainer to get into role very quickly and gives him/her free rein to take control of the encounter based upon the information given in their part of the scenario script. Typically the simulator will listen and talk in response to the lead set by the trainer. As the dialogue unfolds between the two, the issue will become apparent and the challenges for the trainer appear. Usually the trainer will follow a line of discussion to 'unpack' and explore the difficulties, generally until s/he is unable to progress with the simulator's thinking. At this point the 'action' is paused and opened up to the observing group for their thoughts on where to take the scenario next. If a group member comes up with a development or idea, that person may be swapped into the trainer's seat and the tutorial continues from that point on. In this way, different perspectives on working through the challenge can be acted out.

Play, pause and rewind

In the course of the dialogue, the trainer may struggle to take things forward, at which point the action may be paused and solutions requested from the group. Once again a new group member may swapped in as the trainer, but before starting again, the action is 'rewound,' allowing for a different approach to be tried from the outset, in order to see if the challenge can be progressed using an alternative strategy.

Turn up or down

Depending on the confidence and experience of the group members, the number of scenarios run and the expertise of the group, the simulated trainee can increase or decrease the difficulty of the challenge as necessary. In the example scenario, Dr Smith might be adamant that dealing with uncertainty is not possible and that doing tests is the right way to progress towards finding a diagnosis. In such a case, the trainer might need to work quite hard to get Dr Smith to explain this position or be open to accepting an alternative one. With a less confident trainer, the simulated trainee may be 'turned down' and become more amenable to suggestions.

Tune in or out

The scenarios can also be played to relate to very specific events or problems (for example mental health, psychological illness presenting as physical disease or over-confidence) or to more generic difficulties (arrogance, lack of ability to work in a team or lack of punctuality). The simulated trainee can play the scenario in a way to highlight an individual trait or in reference to a specific incident. This gives breadth to the scenario and caters for trainers of different levels of experience. It can also help trainers to see how they approach the issue and the effect this can have on interaction: they can take an approach to get involved in the minutiae or deal with the bigger picture.

Feedback

A significant feature of using a simulated trainee is that the trainer can get feedback from the trainee (by using their character name) and also from the actor out of role (by using his/her real name). The latter is given at the end of the session to the trainer(s) involved in acting the scenario. Feedback from the simulators shows that they find it difficult to swap in and out of role during a scenario, so once in character, they remain in character until the end. These two types of feedback can be powerful: in role the trainer receives direct feedback about the way s/he handled the difficulty (for example 'I wish you had got to the point straight away,' 'I wish you had given me the complaint at the beginning of the tutorial'). Such feedback can prompt the trainer to look at their preferred strategy again. Out of role, the feedback tends to concern verbal and non-verbal approaches to communication, and this provides a useful guide as to how the trainer acts when observed.

Post-session feedback from the trainers participating in the simulation was positive, noting that the approach was both challenging and revealing of their own practice. They felt that they:

- had gained insight into the dynamics of interpersonal communication and interaction;

- were able to reflect on the responsibility of being a GP trainer and some of the more challenging aspects of the role;

- could test out different ways of handling difficult situations in a supportive environment.

Conclusions

By extending the use of role play from a simulated patient to a simulated professional, this innovative approach demonstrates a new and powerful way to involve actors in the continuing professional development of trainers. In this approach the authors have been able to adapt common hi-fidelity tools, usually used with electronic simulation, to interpersonal communication encounters. This powerful technique is cost effective to produce and covers an area of communication which is common to all medical specialities.

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