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Exploring the use of high-fidelity simulation training to enhance clinical skills

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Conflict of interest

None declared

Abstract

The use of interprofessional simulation training to enhance nursing students' performance of technical and non-technical clinical skills is becoming increasingly common. Simulation training can involve the use of role play, virtual reality or patient simulator manikins to replicate clinical scenarios and assess the nursing student's ability to, for example, undertake clinical observations or work as part of a team. Simulation training enables nursing students to practise clinical skills in a safe environment. Effective simulation training requires extensive preparation, and debriefing is necessary following a simulated training session to review any positive or negative aspects of their learning experiences. This article discusses a high-fidelity simulated training session that was used to assess a group of third-year nursing students and foundation level 1 medical students. This involved the use of a patient simulator manikin in a scenario that required the collaborative management of a deteriorating patient.

SIMULATION TRAINING uses a range of techniques such as role play, virtual reality and patient simulators to replicate clinical scenarios in a safe environment. Simulation training can be an effective teaching strategy for improving nursing students' technical, communication and teamworking skills (Poore et al 2014). Mayville (2011) found that exposing nursing students to simulation training based on clinical scenarios improved patient safety, enhanced the students' clinical judgement and reduced the number of clinical errors. There are many simulation training techniques, [Q1. suggest clarifying the meaning of fidelity here by adding 'which vary in their fidelity level depending on how closely they reflect real-life clinical situations' ?] including:

- Low-fidelity simulation – for example, students practising clinical skills while a facilitator plays the role of patient.
- Medium-fidelity simulation – uses elements of technology, for example students practising their clinical skills on a manikin that can replicate vital signs such as pulse or respiratory rate.
- High-fidelity simulation – uses sophisticated technology such as augmented or virtual reality; for example, where a virtual 'talking head' is transposed onto a manikin to appear as though the 'patient' is communicating in real time.

Swanwick (2014) stated that the fidelity of any simulated training session is only required to be as high as necessary to achieve the intended learning outcomes. For example, if the student was required to learn about the respiratory system, then a textbook might be adequate; however, if they were required to demonstrate the management of hypoxia in a deteriorating patient, then a manikin might be necessary.

The benefits of simulation training include (Moorthy et al 2005, Brooks et al 2010):

- Enables students to practise clinical skills in a safe environment and without endangering patient safety.
- Assists students to understand the consequences of their actions.
- Develops person-centred and cognitive skills, including how to follow procedures, decision-making and effective communication.
- Means that training sessions can be repeated as often as necessary.
- Enables education to be matched to the requirements of novices, intermediates and experts.
- Means that feedback from educators can be provided immediately, enabling students to correct errors.

Some research has indicated there is a lack of evidence that simulation training directly improves patient outcomes (Gray 2002); however, alternative studies have demonstrated that it provides an opportunity for nursing students to exercise their clinical judgement in a safe environment (Fey et al 2014). Simulation training also enables reflection-in-action, where nursing students can make treatment decisions during a simulated clinical scenario; and reflection-on-action, where the post-simulation training debrief enables nursing students to consider the effectiveness of any decisions that they made (Schön 1991, Howatson-Jones 2016).

Simulation training provides a link between theory and practice and can develop nursing students' clinical and decision-making skills (Neill and Wotton 2011). Effective high-fidelity simulation training requires extensive preparation, not only to arrange and facilitate each session, but also to conduct a post-session debrief (Dufrene and Young 2014). It is important to remember that simulation training is a technique not a technology, and while it may be used to improve nursing students' competence, it is not a substitute for evidence-based learning (Forrest et al 2013).

Human factors

The Nursing and Midwifery Council (NMC) (2015) stated that human factors and interprofessional practice should constitute core subjects on the nursing curriculum because they lead to improvements in clinical practice and patient safety (Reid and Bromiley 2012). Human factors include non-technical skills such as leadership, communication, teamwork, decision-making and situational awareness (White 2012). They are defined as the interactions between people and a system, which in a healthcare context refers to the processes and procedures that dictate how care is delivered in an organisation (Norris 2009, Reid and Bromiley 2012). Human factors represent a three-way relationship between people's behaviour, organisational systems such as NHS trusts, and safety. Human factors are aimed at incorporating safety within the design of an organisation and developing systems that make it easier for people to 'do the right thing'. In healthcare terms, this might include a nurse feeling able to admit they have made a drug error or to acknowledge that they do not have the necessary skills to perform a procedure (National Patient Safety Agency* 2004, Norris et al 2012).

Interprofessional working

Ineffective communication and teamwork have been identified as leading causes of preventable clinical errors, which can lead to patient injury or death (Poore et al 2014). Interprofessional education is an important component of the undergraduate nursing curriculum and, along with other healthcare professionals such as doctors, physiotherapists and pharmacists, nurses are increasingly expected to undertake interprofessional simulation training to enhance their non-technical skills and improve their ability to work in conjunction with other healthcare professionals (World Health Organization 2010, Swanwick 2014).

Planning

The Code: Professional Standards of Practice and Behaviour for Nurses and Midwives (NMC 2015) requires all nurses to practise safely and effectively, to communicate clearly, and to work in collaboration with other healthcare professionals. The high-fidelity simulated training session detailed in this article focused on the care of a deteriorating patient. The study group undertaking the simulated training session comprised nine third-year nursing students and three foundation level 1 medical students. Three of the nursing students and one medical student participated in the simulated scenario that was the focal point of the training session and which incorporated the use of a patient simulator manikin. The remaining students observed the simulated scenario and participated in the debrief. There was an opportunity later in the day for students to swap roles and undertake a similar simulated scenario with another facilitator, which meant that all the students had the opportunity to participate in, and observe, a simulated scenario.

In considering the learning outcomes expected of the simulation training, it was important to identify any skills gaps the students had and how these could be addressed (Riley 2008). It was also important to consider the students' learning styles to ensure that the learning outcomes were suitable for their level of study. The learning outcomes were broken down into technical and non-technical skills (Box 1).

Box 1. Learning outcomes for the simulated training session

Technical skills

- To safely undertake an ABCDE (airway, breathing, circulation, disability and exposure) assessment
- To complete a National Early Warning Score (NEWS) chart correctly, including undertaking clinical observations

Non-technical skills

- To demonstrate effective communication and interprofessional teamworking skills
- To demonstrate situational awareness and understand when to seek assistance
- To undertake a structured SBAR (situation, background, action and recommendation) handover

The technical skills required the students to undertake an ABCDE (airway, breathing, circulation, disability and exposure) assessment in accordance with Resuscitation Council (UK) (2016) guidelines; and to complete a National Early Warning Score (NEWS) chart correctly [Q2. could a reference be added for the NEWS chart – Royal College of Physicians 2012?], which required the students to undertake clinical observations so that they could identify any signs of patient deterioration (Beaumont and Russell 2012).

The non-technical skills required the students to demonstrate effective communication and teamworking skills; to recognise when to seek assistance; and to undertake a structured handover using the SBAR (situation, background, action and recommendation) handover tool (Leonard et al 2004). The SBAR tool uses concise summaries of the patient's condition to increase the clarity of interprofessional communication. It incorporates a standardised set of criteria, for example the patient's vital signs, skin condition, mental state and respiratory status, as well as the healthcare professional's assessment of the patient's condition. The use of such a standardised format aims to avoid assumptions being made about the patient's status [Q3. and ensures information isn't missed during handover?], which could increase the likelihood of errors and subsequent harm (Gillespie and Chaboyer 2009, Fisher and Scott 2013). The students were also required to demonstrate closed-loop communication appropriately, which is a technique where the person receiving a message repeats it back to the speaker for confirmation (Härgestam et al 2013).

Format

The format of the simulated training session incorporated four stages: a review of the students' preparatory learning; a prebrief; the simulated scenario; and a debrief (Table 1).

Table 1. Format of the simulated training session	
Stage	Time allocated
Review of the students' preparatory learning, including: • Human factors • Patient safety • SBAR (situation, background, action, recommendation) handover tool • ABCDE (airway, breathing, circulation, disability and exposure) assessment	5 minutes
Prebrief – orientation to the patient simulator manikin, the clinical skills room or bed space and the support staff involved	5 minutes
Simulated scenario – focusing on the care of a 72-year-old woman who had undergone surgery for a small bowel obstruction and who was bleeding post-operatively.	10 minutes

Students were to undertake a full ABCDE assessment of the patient and manage any clinical issues	
Debrief – a period of structured reflection and feedback following the simulated scenario	15 minutes

The learning outcomes were discussed in the prebrief, and again in the debrief, to assess whether they had been met. Between the prebrief and the debrief, the simulated scenario was designed to ensure that any gaps in the students' knowledge or assessment skills would be addressed by achieving the learning outcomes (Sotto 1994). The simulated scenario featured a clinical emergency that required the students to undertake a full ABCDE assessment of the patient to determine any specific clinical challenges and manage them, thereby demonstrating safe practice and technical skills. The simulated scenario was halted at an appropriate point to allow the debrief to take place. The debrief involved a period of structured reflection and feedback.

Review of the students' preparatory learning

During the development of the simulated training session, the students attended preparatory sessions, which outlined the theory underpinning ABCDE assessments, human factors, patient safety, non-technical skills and the SBAR handover tool. These subjects were also examined in an e-book that was prepared by the educational team and disseminated to the students, which included a self-assessment section to test the students' knowledge.

Prebrief

The simulated training session began by ensuring that all the students had revised the theory underpinning the ABCDE assessment and agreed with its principles. Ground rules, such as maintaining confidentiality about each other's mistakes and acting in a supportive manner, were also agreed as a group, with the aim of promoting teamwork and ensuring that the students were comfortable with participating in the simulated scenario and the debrief (Wickers 2010).

The students were also provided with a debriefing guide, shown in Table 2. This was designed to reflect the learning outcomes of the simulated training session and to enable students who were observing a simulated scenario to record their perceptions, for example identifying gaps in other students' performance, which could then be discussed in the debrief (Forrest et al 2013).

Table 2. Debriefing guide	
Technical and non-technical skills	Considerations for debrief
ABCDE assessment (airway, breathing, circulation, disability and exposure)	• Were the students able to recognise their own limitations? • Did the students recognise when and where to seek appropriate assistance?
Communication	• Was the SBAR (situation, background, action and recommendation) handover tool undertaken correctly? • Was closed-loop communication used appropriately? • Who was coordinating? • Was the goal of the simulated scenario communicated – in this case, the management of a deteriorating patient?

	• Were updates provided?
Teamwork	• Was the plan for managing the patient shared?
	• Was open communication demonstrated?
	• Was the input of the students listened to [Q4. by whom – the other students?] ?
	• Was information shared with the team?
Leadership	• Was the simulated scenario well-managed?
	• Was the team fully involved?
	• Did the leader offer support and guidance?
	• Did the leader encourage individuals to speak up if unsure?
	• Did the leader gather information and anticipate challenges?
Situational awareness	• Where are we now?
	• What have we done?
	• What needs to be done next?
Anything else	• Consider factors such as: decision-making; listening to others; and escalating concerns, using all available information
(Flin and Miran 2004)	

Prebriefing and introducing the simulated scenario are important elements of simulation training (Fey et al 2014). Prebriefing involves introducing students to the simulated scenario environment, for example:

- Identifying where important pieces of equipment such as the resuscitation trolley and catheterisation kits can be located.
- Understanding the clinical situations that the patient simulator manikin can and cannot replicate, for example the manikin used in this simulated scenario was fitted with a cannula, which meant that intravenous (IV) fluids could be provided. However, it could not replicate bleeding, which would have to be communicated verbally.
- The roles of the facilitator, participating students and observing students.
- A recap of the learning outcomes.

This prebrief was undertaken with reference to the human factors such as the importance of communication and teamwork, because it was important to reduce the probability of error by ensuring the students were clear about their roles and how to communicate with other members of the team (Fisher and Scott 2013).

During the prebrief, the facilitator (the author) encouraged the students to suspend their disbelief and immerse themselves in the simulated scenario; for example, they were told to regard the patient simulator manikin as a 'real' patient. To facilitate this, the manikin was given a name and the students were instructed to inform it of any interventions that were to be undertaken (Riley 2008). Tun et al (2015) stated that while a simulated scenario might not completely reflect reality, it must accurately represent clinical signs and stimuli; therefore, the students were asked to check that all the necessary equipment such as oxygen masks were in the appropriate place and that they understood how these worked.

It was agreed that the facilitator would pose as a healthcare assistant throughout the simulated scenario. This enabled the facilitator to be in place to support the students during the simulated scenario rather than using an external facilitator, which would have meant repeatedly halting the scenario so that the students could ask questions. However, it was explained to the students that as a healthcare assistant, the facilitator could only undertake tasks or provide information that was consistent with that role; for example, while the facilitator might gather equipment or request [Q5. arterial?] **blood gas analysis**, they could not undertake phlebotomy or connect IV fluid lines. This was in part because previous simulated scenarios had demonstrated that students would sometimes delegate tasks to a facilitator that they did not feel confident to undertake themselves.

Before the simulated scenario began, the participating students were provided with the simulated patient profile (Box 2).

Box 2. Simulated patient profile

Patient

- Joyce is a 72-year-old woman who was admitted three days previously with abdominal pain. She was in theatre for a laparotomy and small bowel resection and has been back on the ward for approximately two hours. Her wound site is swollen and the dressing is blood-stained

- The patient has a medical history of type 2 diabetes and hypertension, but is otherwise fit and healthy. She takes 500mg metformin twice per day and 40mg atenolol once per day

- The healthcare assistant calls you over to say that the patient appears pale and is becoming drowsy

Information known to the facilitator, which should be established following ABCDE (airway, breathing, circulation, disability and exposure) assessment

- Airway – the patient's airway is **normal** [Q6. ok to change to patent?]; she is drowsy but awake and speaking in full sentences

- Breathing – the patient's oxygen saturation is low at 82%. This should increase after the administration of 100% oxygen administered by a non-rebreather mask. The patient's respiratory rate is **8 breaths per minute** [Q7. was this considered to be low as well?]. On examination, her chest sounds are normal on auscultation with a stethoscope – it should be noted that this constitutes a medical role if the nursing students are not trained in this technique

- Circulation – the patient's blood pressure is 87/40, which is low. Her blood pressure improves in response to IV fluid boluses, but this response is short acting. Her heart rate is 120 beats per minute and increasing steadily, while her capillary refill time is three seconds. The patient's urine output is 65mL for the past three hours, and she reports feeling thirsty

- Disability – the AVPU (alert, voice, pain, unresponsive) scale indicates that the patient is alert but drowsy. The patient's blood glucose level is 6mmol/L, and her temperature is 35.7°C

- Exposure – the patient does not have a drain inserted. Her abdomen is noticeably swollen and bleeding onto a dressing at the surgical wound site. **The patient's pain score is 7 out of 10** [Q8. ok to add some more information about the scale used for this – did a score of 0 mean no pain and 10 mean the worst pain possible?]

Investigations

- Arterial blood gas results – arterial pH 7.34; partial pressure of carbon dioxide (PaCO$_2$) 4 kilopascals (kPa); partial pressure of oxygen (PaO$_2$) 8kPa; **bicarbonate (HCO$_3$) 18; haemoglobin 6; base excess -2.1** [Q9. please add the units for each of these figures]
- Chest X-ray – normal
- Electrocardiogram – normal

Simulated scenario

The simulated scenario chosen was based on the author's clinical experience. Simulation training is effective when the scenario follows a template that reflects 'real-life' events; this reinforces the credibility of the simulated scenario (Riley 2008). The simulated scenario presented in this article was designed with assistance from the faculty technicians who used their expertise to replicate real-life conditions. Using the patient simulator manikin, the technicians were able to develop a programme for each simulated scenario. For instance, if the scenario required the manikin to exhibit the symptoms of sepsis, then it would be programmed to exhibit confusion and say that it felt cold, prompting the student to check the temperature. The technicians also ensured that any catheters and drains were in situ when required.

A faculty plan was devised by the author to ensure the simulated scenario progressed logically and met the learning outcomes (Table 3). This covered aspects such as staffing levels, room layout and manikin type. It was important to consult with the technicians to ensure that the manikin was functioning correctly, that all the required equipment was in place and that the scenario plan was comprehensive. This level of planning was important because the fidelity of any simulated scenario can be adversely affected by technical issues that produce inaccurate stimuli (Riley 2008). For example, if a required piece of equipment such as a thermometer was missing from the clinical skills room and had to be supplemented with an alternative item, the manikin might not respond appropriately, which could interrupt the fidelity of the simulated scenario.

Table 3. Faculty planning information		
	Technical skills	Non-technical skills
Simulated scenario of a rapidly deteriorating patient	- ABCDE (airway, breathing, circulation, disability and exposure) assessment of a patient - Fluid resuscitation – [Q10. intravenously?] replenishing bodily fluid lost through pathologic processes such as excessive sweating and bleeding	- Communication, for example use of the SBAR (situation, background, action and recommendation) handover tool and closed-loop communication - Teamwork - Leadership and event management - Situational awareness
Learning objectives	To safely undertake an ABCDE assessment [Q11. could the other learning objective mentioned previously be added here – i.e. 'To complete a	To demonstrate optimal communication and teamworking skills

	National Early Warning Score (NEWS) chart correctly, including undertaking clinical observations' ?]	• To demonstrate situational awareness and understand when to seek assistance from colleagues • To perform a structured handover using the SBAR tool
Staffing	Faculty staff required to facilitate **technical** [Q12. and non-technical ?] skills: • Facilitator [Q13. acting as a healthcare assistant ?] • Patient simulator manikin technicians • Technicians required to film the simulated scenario	Students required to demonstrate [Q14. technical and ?] **non-technical skills:** • Three students playing the roles of staff nurses • One medical student playing the role of doctor
Set up	Environment required to facilitate **technical** [Q15. and non-technical ?] skills: • Clinical skills room • Patient simulator manikin with a cannula fitted • Bed • Wig and female clothes	Equipment required to facilitate [Q16. technical and ? (since some of this equipment such as fluid bags and thermometer would be for technical skills)] **non-technical skills:** • Fluid bags containing 500mL 0.9% sodium chloride • Drip stand • Non-rebreather mask to assist in the delivery of oxygen therapy • Arterial blood gas sampling kit • Equipment to enable full blood count, blood cultures and arterial blood gas to be taken if required • Thermometer • Abdominal dressings • Observations charts • Patient notes • SBAR form

It was also important to consider the layout of the clinical skills room, which could not be too large or too small since this could have presented a barrier to communication. The clinical skills room contained the equipment required to replicate a realistic simulated scenario; in this case it was set up to replicate a ward environment. The clinical skills room provided a safe learning environment and facilitated the repetition of clinical skills so that the students could develop their practice (Ricketts 2011).

The students were permitted to wear casual clothing to undertake the simulated scenario because this reflected faculty policy. However, studies have demonstrated that professional attire can enhance the student experience, promoting a sense of professionalism and assisting students to maintain a professional demeanour (Wickers 2010, Berragan 2011).

The clinical emergency featured in this simulated scenario focused on the care of a 72-year-old woman who had undergone surgery for a small bowel obstruction and was bleeding post-operatively (Box 2). The simulated scenario used a manikin as an advanced patient simulator. The manikin displayed simulated anatomical and clinical features; for example, it could reproduce realistic respiration; palpable pulse; blood pressure wave forms; pupil responses such as blinking and reactions to light, which can indicate neurological symptoms; and realistic convulsions. The manikin could also reproduce dialogue to guide the students; for example, it was able to express pain and discomfort. The manikin was programmed to replicate a scenario that focused on physiological and pharmacological factors; for example, the manikin's 'vital signs' were programmed to respond to clinical interventions such as the administration of oxygen or IV fluids. The manikin was designed to replicate a high-stress environment and assist the students in developing their technical and non-technical skills such as situational awareness, teamwork and communication (White 2012).

The students were not informed of the scenario content before the prebrief and were given limited clinical information so that they would be encouraged to use their assessment skills. When the simulated scenario began, the manikin technician produced stimuli that would prompt the students in their ABCDE assessment; in this case the patient was 'drowsy' and their condition was deteriorating. A 'staff nurse' (one of the three nursing students undertaking the scenario alongside the medical student) was first to enter the simulated scenario and progressed through the ABCDE assessment with minimal support from the 'healthcare assistant' (the facilitator), other than to instruct the healthcare assistant to undertake some clinical observations including oxygen saturations, blood pressure, pulse and respiratory rate. However, the facilitator noted that the technical skills were not all undertaken correctly; for example, the staff nurse did not turn on the oxygen or administer IV fluids quickly enough.

Working through the assessment process as a team enabled the students to demonstrate that they could communicate effectively and recognise the necessity for clinical escalation, particularly since, in this case, the simulated scenario was designed in such a way that the students were required to seek the support of senior colleagues. This examination of their non-technical skills, such as leadership, teamwork, situational awareness, decision-making and task management, provided material for the debriefing (White 2012).

Debrief

The debrief involved a session of structured reflection and feedback following the simulated scenario, which was based on the concepts of reflection-on-action and learning through experience (Schön 1991, Riley 2008). The debrief also enabled those students observing the clinical scenario to learn from their peers' experience through active listening and reflection (Roberts and Greene 2011).

Debriefing is an essential element of learning and provides an opportunity for reflection, which in turn means that a learning experience can be translated into practice. This may involve the use of a reflective journal; watching a video replay of the simulated scenario, which enables students to visualise and correct any suboptimal practice; and taking part in an open-ended discussion using advocacy and inquiry (advocacy involves stating one's views and opinions, while inquiry involves asking questions) (Mayville 2011). The author's faculty has not used video replay as a debriefing technique; however, studies have demonstrated that it can increase students' engagement with debriefing and assessment (Chronister and Brown 2012).

During a simulated scenario, students are expected to suspend their disbelief and play a role, for example staff nurse or doctor. Following completion of the simulated scenario, it is important to support students to 'come out' of this role so that they can begin to reflect on their experience. This involves four stages (Swanwick 2014):

- Prebrief – the facilitator explains what will happen next, thus preparing the student for feedback. It should be noted that this prebrief stage differs from the main prebrief that precedes the simulated training session.
- Coming out of the role – the student is asked to move away from the bed space to a separate area to discuss the simulated scenario.
- Constructive feedback – the students who observed the simulated scenario are encouraged to elaborate on any elements that, in their opinion, were successfully undertaken.
- Contemplation – the students take time to reflect on their performance and to identify areas they want to discuss with the group.

A table large enough to seat all of the students and the facilitator was provided for the debrief, to ensure that all of the students regarded themselves as equal (Wickers 2010). However, following completion of the simulated scenario detailed in this article, the students began to discuss their experiences immediately; therefore, the facilitator reasoned that it was important to begin the debrief straightaway to capture their reflections. This meant that the debriefing took place in the clinical skills room besides the bed space rather than at the designated table. On reflection, because the debrief took place at the bedside, the students began to discuss the simulated scenario as if they were real-life healthcare practitioners and the manikin a real-life patient; this may have hindered the students' ability to effectively 'step-out' of their simulated clinical roles and affected their ability to debrief effectively.

Facilitators should develop optimal practice frameworks for simulation training (Neill and Wotton 2011). In the high-fidelity simulated training session presented in this article, the facilitator provided the students with a debriefing guide to support their reflection on the scenario (Table 2). This enabled students to take notes while they were observing the simulated scenario, which could then be fed back to those who participated.

Following the simulated scenario, the facilitator opened the debrief by asking the students a question such as, 'How do you think that went?' before allowing them to discuss their experiences so that they could benefit from peer support. This approach enabled the students to express their thoughts freely (Wickers 2010, Fey et al 2014).

Following this informal discussion, the facilitator intervened to provide a structure to the debrief, which followed the format of the debrief guide outlined in Table 2. The facilitator also paused following each student's response to provide them with time to reflect on their answers and to encourage quieter students to take part (Wickers 2010). Encouraging quieter students to discuss their experiences of the simulated scenario was challenging, and, on reflection, the author considers that incorporating open-ended questions, active listening and deliberate silences might have been useful tools to promote discussion (Forrest et al 2013). For example, if the facilitator allows any silences to continue without intervening, this can encourage students to take part because it passes the responsibility for the discussion back to them.

Another challenge for the facilitator was to ensure that any feedback provided to the students was not overly critical, since excessive criticism can damage the relationship between facilitator and students, or mean that students can be reluctant to take part in future simulated scenarios (Rudolph et al 2013). For example, it was noted that the students participating in the simulated scenario were slow to administer oxygen. In addition, the nursing students were reluctant to communicate their hypotheses of the patient's condition. In this instance, the author used advocacy and inquiry to assist students to explain why, for example, they were uncomfortable administering oxygen, commenting: 'I notice the patient's oxygen saturation was low, but that you didn't provide oxygen immediately.' This type of non-accusatory statement can prompt students to analyse their actions during the simulated scenario, without harming their self-esteem. By adopting a non-judgemental approach, the facilitator could guide students to

examine their own actions without criticising them directly, which enabled the facilitator to maintain an effective relationship with the students (Rudolph et al 2013).

The nursing students stated that although they had initially felt comfortable undertaking an ABCDE assessment, as the simulated scenario progressed they began to 'lose their way', which resulted in them failing to administer oxygen promptly. After discussion, the students agreed as a group that if an individual became confused by the ABCDE assessment process, they would either begin again as a group or halt the process and ask the whole team to assess their progress using situational analysis, which would involve a member of the team summarising the progress made up to that point.

By using a structured debriefing guide (Table 2), the facilitator aimed to use the students' experiences of the simulated scenario to improve their future practice. As well as the technical skills undertaken during the ABCDE assessment, the debriefing guide focused on leadership, teamwork, situational analysis and communication. For example, asking the students to consider who had led the simulated scenario enabled them to consider whether the team had functioned effectively.

To ensure that the students who took part could benefit from the simulated scenario, either by improving their technical or non-technical skills, it was important that the debrief involved those who had observed the simulated scenario as well as those who had taken part. This meant that after the participating students had completed their debrief, it was important that the observing students were asked to contribute their observations of the simulated scenario, using the notes they had made in the debriefing guide (Table 2).

To further improve their skills and consolidate their learning, once the students had completed one session of simulation training they moved on to another simulated scenario with a separate facilitator.

Reflection

This simulated training session was a positive experience for the author, who acted as the facilitator. It increased the author's knowledge of the theory behind simulation training and debriefing, and how this could promote patient safety in clinical practice. The simulated training session also emphasised the vital role of the facilitator and how finding a suitable environment, ensuring the appropriate equipment was available and designing a useful scenario was vital if the session was to meet the students' required learning outcomes.

The use of a structured debrief was useful, as was the use of advocacy and inquiry, which assisted the students to understand and reflect on the experience of the simulated scenario without the facilitator having to critique individual performances. However, at certain points during the debrief, the facilitator felt that she dominated the discussion by providing excessive feedback and not allowing the group members to take the lead. Therefore, in future, the author would be more confident in encouraging the students to openly contribute to the debrief, and would allow them to evaluate their performance as a group.

Conclusion

Simulation training is a method for increasing students' knowledge and performance of technical and non-technical skills. Simulation training can include role play, virtual reality and patient simulators, and can link theory and practice to develop nursing students' technical, communication and teamworking skills. However, simulation training also requires extensive preparation to implement a realistic clinical scenario, followed by a debrief session that assists students to reflect on their experiences and what they have learned. An effective simulated training session should assist students to practise clinical techniques within a safe environment, understand the consequences of their actions and practise what they have learned.

Overall, the experience of introducing a simulated training session for nursing and medical students was positive, enabling the author to increase their knowledge of the theory behind simulated learning, and providing students with the opportunity to practise technical and non-technical skills in a safe environment.

* On 1 April 2016 the statutory patient safety functions previously delivered by NHS England transferred with the national patient safety team to NHS Improvement

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