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The use of simulation as a learning approach to non-technical skills awareness in final year student nurses

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ABSTRACT

Understanding what non-technical skills are and their relevance for healthcare practitioners has become a new area of exploration. Although recent literature has highlighted the necessity of introducing non-technical skills training and assessment within medical education, nursing education has still to fully embrace this skills training. The purpose of this paper is to explore the use of simulated practice as a learning approach to demonstrate and assess non-technical skills for final year nursing students. An established ward simulation exercise was refocused to incorporate opportunities for these nursing students to be assessed on their ability to demonstrate application of non-technical skills. Opinions on whether this was a successful strategy were sought from the students by means of module evaluation questionnaires. Analysis of this data revealed that the majority of the students agreed that it was an effective learning approach, allowing them to demonstrate their non-technical skills, be assessed and subsequently identify further learning needs.

Introduction

Ward simulation training has been recognised as a useful tool to enhance nurses' education (Medley and Horne, 2005; Alinier et al., 2006) and is gaining greater focus within the nurse education debate (Murray et al., 2008; Baillie and Curzio, 2009). The use of simulation as an educational strategy of active learning allows the students to develop, refine and apply their knowledge and skills within a safe environment (Vandrey and Whitman, 2001; Jeffries, 2005). More specifically, the literature highlights that the use of simulation training improves cognitive and psychomotor skills (Alinier et al., 2004) self efficacy and confidence (Nunn, 2004; Alinier et al., 2006) and communication and teamwork (Shapiro et al., 2004; Beaubien and Baker, 2004) Additionally, the use of simulation and role play has been recognised as an effective strategy to assist students to be competent in clinical or technical skills (McCallum, 2007; Harder, 2010; Shepherd, 2010).

However, it has been acknowledged that "non-technical skills are the cognitive and social skills that complement workers' technical skills" (Flin et al., 2008, p.1) They have been described as the behavioural aspects of work required to ensure the delivery of safe and effective care and have been defined as situation awareness, decision making, communication, teamwork, leadership, managing stress and coping with fatigue (Flin et al., 2008). Although the development of non technical skills training was initiated within the aviation industry, the underpinning philosophy relates to safe and efficient practice and can therefore be easily translated into a range of other work settings including the health service in relation to patient safety. In recent years, much work has been undertaken to develop assessment and training systems for medical staff (Fletcher et al., 2004; Yule et al., 2006). More recently, exploration has taken place to identify a taxonomy of non technical skills for operating theatre scrub nurses (Mitchell and Flin, 2008) which has challenged the authors of this paper to explore the awareness of non technical skills amongst nursing students.

Nursing, from a Scottish perspective, whilst recognising the importance of non-technical skills such as decision making, leadership and team working, does not explicitly teach and assess this within the pre-registration program where fitness to practice has focused on developing technical skills (clinical competence) and clinical expertise. However, Milligan (2007) purports that essential changes in nurse education from the outset of their training programmes, with the inclusion of human factors theory, is a prerequisite to patient safety. A recent parliamentary committee report on Patient safety stated that,

"the NHS lags behind other safety-critical industries, such as aviation in recognising the importance of effective team-working

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and other non-technical skills" (House of Commons Health Committee, 2009 p. 56).

Furthermore this committee recognised that a lack of non-technical skills can produce lethal consequences and therefore recommended that this training be integrated into undergraduate and postgraduate education. (House of Commons Health Committee, 2009).

Although there appears to be limited studies relating to both non-technical skills training in undergraduate nurse education and the use of simulation to achieve that training, the author's views are that the use of simulation as a learning approach to non-technical skills awareness can begin to contribute to patient safety and optimal care delivery. This can be achieved by providing the learners with opportunities to experience and manage unfolding scenarios in a supervised ward simulation environment, thus raising awareness of the impact of these non technical skills within clinical scenarios.

Simulated practice has been utilised with final year, adult programme nursing students at the University of Dundee since 2001, whereby participation in a ward simulation ward exercise (WSE) prepares them for the transition to the realities of their pending newly qualified roles. The initial aim of the exercise was to afford students the opportunity to demonstrate organisational, managerial and clinical skills (Mole and McLafferty, 2004). More recently, due to a change in module leadership and an increased awareness of the importance of non technical skills as an adjunct to technical (clinical) skills acquisition in undergraduate training, the aims of the simulated exercise have refocused on the demonstration and assessment of non-technical skills as outlined in Table 1.

The simulated exercise

Student preparation

Students received an introductory session to prepare them for the WSE. This included outlining the aims of the WSE, providing a short awareness session on non-technical skills, discussing their remit during the exercise and explaining the non-technical skills framework that would be used to assess their performance (Appendix 1) Students were made aware that the framework was adapted from work done with other professionals and that each category represented a non-technical skill with the elements outlining the various aspects of that skill that would be observed and assessed during the simulated exercise. For example, students who were observed prioritising various tasks as scenarios unfolded within their simulated ward environment would be demonstrating their task management skills. Groups with 6–8 students were then formed to participate as a nursing team within the simulated ward and allocated their 3 h timetabled session. This comprised 30 min for handover and orientation, 90 min for the actual exercise, 15 min for students to compile their handover with self assessment and 45 min for the concluding debrief component of the exercise. Subsequent to this introductory lecture, they had a self directed timetabled session which afforded them some time to prepare for the exercise and become familiar with the assessment template. Students utilised this session to organise themselves into a nursing team and decide their roles which comprised a charge nurse, senior staff nurse, staff nurse and 3rd year student nurse.

The ward exercise

The organisation of the simulated ward environment did not differ greatly from the original exercise outlined by Mole and McLafferty (2004). A busy but realistic ward environment was created within the Faculty's multi-professional Clinical skills Centre with the use of five experienced individuals who act as patients and adhere to a scripted scenario, and one high fidelity simulator manikin. Approximately ten sessions were facilitated over a five day period to accommodate the number of students within a cohort.

Students were briefed on their 'patients', provided with the opportunity to ask for clarification on any issues and given a familiarisation tour of the ward environment. Their remit during the exercise was to organise and manage the ward by planning, delivering and re-evaluating their care delivery during the unfolding scenarios within the simulated ward. For ease of identification during the exercise, students wore a badge denoting the role they had chosen to adopt during the exercise. Nursing and medical documentation utilised within the WSE reflected those that students were familiar within their practice areas.

Post exercise debriefing session

Immediately following the exercise students were required to brief their adopted 'charge nurse' regarding the care management of their simulated patient. This information was used by the 'charge nurse' to simulate a ward handover to the next shift of nurses (i.e. the facilitators) at the end of their 'shift'. The handover which began the debrief session, was used as a basis to explore the care management, decision making and other skills demonstrated by the students. Students were asked to self evaluate their performance both individually and as a team by answering the questions outlined in Table 2 and the facilitators outlined the strengths and weaknesses of the nursing teams they had assessed. The simulated patients feedback sheet formed part of the debrief on how the 'patients' perceived their care. On average the debriefing sessions lasted about 45 min. On culmination of the session, the students as a group had highlighted an area of non-technical skills application requiring further exploration. Once this was finalised by the students and the facilitators, a plan was agreed to evidence the further exploration that students would embark upon prior to the end of the module.

Evaluation

It should be noted that this evaluation utilised data routinely collected from our ward simulation exercise evaluations. However, refocusing the simulated exercise on non-technical skills in turn refocused our evaluation of the specific aims of the exercise as

Table 1
Re-focused Ward simulation Exercise Aims.

To afford students the opportunity to evidence the application of their clinical judgement, management and decision making skills
To provide opportunities for students to demonstrate effective communication, team working and leadership within a dynamic clinical environment
To encourage students to identify their learning needs in relation to non-technical skills

Table 2
Feedback session.

What went well?
• Strengths of ward team
• Strengths of performance
What could be done differently?
• Areas that went less well
• Areas of weakness
What areas need further exploration in terms of suggestions for change?