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# Does simulation enhance nurses' ability to assess deteriorating patients?

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ABSTRACT

Recognising and responding to patient deterioration has been identified as a key skill in nursing care to ensure that care is escalated for prompt, efficient management of the potentially critically ill patient. Simulation is one teaching strategy that has been established in nurse education as a method for enhancing skills.

The objective was to explore the experiences of registered nurses to ascertain whether they perceived that simulation enhanced their skills in recognising the deteriorating patient.

An exploratory qualitative design was used. Data were collected from registered nurses using semi-structured interviews following a professional development course where scenario-based simulation had been used to assess the patient. Eight registered nurses were interviewed for this study. Semi-structured interviews were conducted face to face. Verbatim transcripts were analysed using thematic analysis to identify major themes.

Four themes were identified: knowledge, improved assessment skills in caring for the acutely ill patient, the learning environment and decision making. The use of simulation as a strategy was perceived by nurses to improve their own ability in identifying deteriorating patients. The participants described how their knowledge was transferred to clinical practice, with the overall perception that this led to improved patient care.



## 1. Introduction

The challenges associated with early recognition and response to deteriorating patients have been acknowledged extensively (Cooper, 2013; Rattray et al., 2011; DeVita et al., 2010). It has been identified that deteriorating patients often have changes in their physiological indictors prior to deterioration. The introduction of early warning tools, such as National Early Warning Score (Royal College of Physicians, 2015), has provided a means to alert the nurse to altered physiology. If a systemic assessement, interpretation of the observations and subsequent appropriate action is achieved in a timely way, this potentially can impact significantly on patient outcomes (DeVita et al., 2010).

Registered nurses are faced with increasing workload, demands of the job, and the acuity of the patient on the ward (Cooper et al., 2011). It has been acknowledged that there are concerns about whether registered nurses have the knowledge and skills to be able to detect and respond to the acutely unwell patient (DeVita et al., 2010; Askew et al., 2012; Waldie et al., 2016). However, it has to be recognised that there could be unacceptable consequences arising from of a lack of knowledge and skills in identifying the deteroriating patient. It is imperative to consider the efficient and effective delivery of education necessary for the registered nurse to provide safe care of the deteriorating patient (Jansson et al., 2013; Kelly et al., 2014).

Simulation is a teaching method that has been used to improve clinical skills with good evidence that it also increases confidence along with decision making skills (Stirling et al., 2012; Wolf et al., 2011). For some years simulation has been used in undergraduate nursing programmes with positive results (Alinier et al., 2006; Cant and Cooper, 2010). The use of high fidelity manikins provides a non-threatening and safe environment allowing the nurse to engage in an activity that reflects clinical practice, but without causing harm to the patient (Gaba, 2007). The evidence also shows that the debrief and feedback is a crucial part in the development of

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knowledge and it gives the opportunity for the nurse to reflect on practice (Abelsson and Bisholt, 2017).

There is a plethora of literature that supports simulation has a positive benefit for patient safety (Cannon-Diehl, 2009; Disher et al., 2014; Cooper, 2013). Most of the evidence within the context of nursing has been specific to the development of the undergraduate nurse; there is limited literature regarding the ongoing effectiveness of simulation to develop knowledge acquisition for the registered nurse and the impact this has on clinical practice (Jansson et al., 2013; Hauber et al., 2010; Stirling et al., 2012). While some of the principles of using simulation in the education of pre-registration students is applicable to the post-registration setting, it is inappropriate to assume the same processes will be effective in improving skills and changing practice for the registered nurse. The literature has identified that the effectiveness of simulation-based learning for post-registration nurses is still largely unknown (Alinier and Platt, 2013), and furthermore there is limited empirical evidence to support the overall effect simulation has on clinical practice, with regard to the transfer of knowledge and skills clinical practice (Murray et al., 2008).

## 2. Background

Nursing is a profession that requires the registered nurse to be competent at a required professional level (Nursing and Midwifery Council, 2015). The essential knowledge and often the complexity of the skills require the registered nurses to be proactive in their development to be effective practitioners. As a learning strategy, simulation allows for active participation where there is construction of knowledge which is relevant to the individuals. Simulation promotes creative thinking and allows the nurse to problem solve and to develop competence in a safe environment (Garrett et al., 2010; Nagle et al., 2009). Educational theorists such as Knowles (1970) and Kolb (1984) identified that adult learners are interested in problem-centred approaches where learning is derived from constructivism. They support the notion that learning takes place for students who play an active role in learning. Simulation has been identified as an important method of learning and one that can provide a bridge in the transference of knowledge to practice (Hauber et al., 2010; Wolf et al., 2011; Alinier and Platt, 2013).

Critical thinking and decision making skills are a crucial element of the registered nurse's role; simulation actively encourages and develops these vital skills in a safe environment (Disher et al., 2014; Kelly et al., 2014; Jansson et al., 2013). Constructive feedback plays an important role in the development of the nurse's learning (Kegler et al., 2012). Although Day (2007) views that there is a place for simulation but it is unlikely to promote faster skills acquisition and could hinder the actual process of learning if it takes the nurse away from the patient and the experienced mentor. There is a relationship between knowledge acquisition and performing skills (Liaw et al., 2011), although mastering a skill may not mean that nurses are effective at decision making (Elfrink et al., 2010: Hauber et al., 2010). It is the act of effective decision making that is key when escalating the treatment of a deteroriating patient and the need for the nurse to be empowered with the knowledge and skills (Liaw et al., 2016). Endacott et al. (2012) noted that decision making was a complex process and for simulation to have an influence on the timely management of the deteriorating patient there needs to be a high level of clinical skill and knowledge.

Simulation can be a particularly effective method in enhancing the registered nurse's process of decision making as it can be practised in a safe environment. A safe learning environment is viewed as a positive factor in the retention of knowledge (Cant and Cooper, 2010; Garrett et al., 2010). Furthermore, Merchant (2012) noted an improvement in team working and communication skills.

The positive benefits of simulation as an educational tool allow nurses to interact and they can immerse themselves in a clinical scenario without causing harm to the patient. Skills can be practised repeatedly and nurses can learn from their mistakes (Tiffen et al., 2009). Furthermore, the simulated environment allows nurses to reflect on their skills and knowledge and this in itself promotes learning and is viewed as a positive aspect of simulation, the debrief playing a vital role in learning (Abelsson and Bisholt, 2017).

Simulation has been reported to have a positive effect on nurses' confidence in their knowledge and skills which leads to improved management of the acutely ill patient (Ozekcin et al., 2015; Stirling et al., 2012). Skills are learnt more quickly in simulation than in a traditional classroom setting, where simulation promotes knowledge with the development of clinical skills (Cooper et al., 2011; Garrett et al., 2010). Simulation has been shown to have benefits over other teaching methods in some settings but the realisation of these benefits largely depends on the context (Cant and Cooper, 2010). These benefits have not been consistently demonstrated and there is limited evidence to support whether there are any differences between a more traditional method of teaching and simulation (Zulkosky, 2012). Scherer et al. (2007) found there to be no difference in knowledge and confidence for a group of nurses taught by simulation compared to those taught by case studies.

In summary, simulation has had many positive benefits. The evidence suggests that the simulation environment actively encourages learning, decision making skills, confidence and assessment skills (Kaddoura, 2010; Disher et al., 2014). Simulation provides the nurse with a safe environment to practise, where feedback is given and there is time to reflect. Despite our knowledge of the benefits of simulation, there is limited evidence of the benefits for the post-registration practitioners who do have knowledge and skills, but need the exposure to practise undertaking an assessment of the patient to enhance effective decision making regarding the deteriorating patient. The transfer of knowledge and skills to performance in practice has been acknowledged as an area for further research, particularly with regard to whether the knowledge gained in simulation is used in clinical practice and hence results in safer patient care (Disher et al., 2014; Hallenback, 2012). The skills involved in identifying a deteriorating patient are essential to ensure safe and efficient management of patients.

## 3. Method

### 3.1. Aim

The aim of the study was to explore the experience of registered nurses who had undertaken a continuing professional development course using simulated practice as an educational strategy to recognise the deteriorating patient.

### 3.2. Setting

A continuing professional development course was offered to registered nurses to develop knowledge and skills in acute and high dependency nursing. This was an existing course which had been in use for over five years, consisting of a simulation component. It was offered to nurses who worked in an acute care setting. One specific aim of the module was to develop the nurse's skills in identifying the deteriorating patient; this was achieved through classroom teaching, online learning and simulation. The course consisted of five study days which were divided between classroom teaching and simulation. The classroom teaching of 3 hours consisted of a