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Preparing students to respond: A pilot study to explore whether Mask-Ed™ simulation can assist students in developing clinical judgment

Abstract

Clinical judgment is a key component of 'thinking like a nurse' (Tanner, 2006). This pilot project uses Mask-Ed™ simulation in conjunction with Tanners (2006) Clinical Judgment Model to explore clinical judgment in a pre-clinical workshop.

Method: a cross sectional survey was conducted with third year nursing students enrolled in one unit of study.

Results: The confidence of students to respond to a patient, and notice patient cues, two of the four domains of clinical judgment (Tanner, 2006) was increased in workshops that used Mask-Ed™.

Conclusion: Mask-Ed™ when used in a pre-clinical workshop shows the potential to positively affect the student nurse's ability to notice patient cues, and respond to patients, key components of patient care and the development of clinical judgment.

1. Introduction

Clinical simulation has become an integral component of contemporary Australian undergraduate nursing curricula. McAllister et al. (2013) suggest that the key driving forces are organizational constraints related to student clinical placements and the need to teach nursing in a safe environment. Simulation encompasses an array of different methods such as; the use of case studies, high technology simulators, basic manikins, simulated or standardized patients and part task trainers.

There is a wealth of research into the use of simulation in nurse education (Lapkin et al, 2010). The realistic nature, sometimes referred to as 'fidelity' of clinical simulation has been linked to an enhanced student learning experience (McCaughey & Traynor, 2010; Miller & Bull, 2013), Hamstra et al, (2011) assert however, that it is not the realism, but the alignment and correspondence to functional tasks that is important in simulation. In the USA, a longitudinal randomized controlled trial reported the use of simulation as a valuable way to prepare nursing students for clinical practice (Hayden et al, 2014). They also suggested that simulation could be used to replace or reduce clinical practice hours without detriment to student outcomes (Hayden et al, 2014). However, simulation in Australia is used as an adjunct to placement hours, rather than a replacement.

Mask-Ed™ is a simulation method which involves the use of silicone masks and props to disguise an educator/expert. The educator portrays a character with both clinical and social dimensions and the characters' history then becomes 'a platform for learning' (Reid- Searl, 2011). Mask-Ed ™ has been generally explored in relation to nursing education (Reid-Searl et al, 2012, Kable et al, 2013, Reid-Searl et al (2014)) but not specifically examined in relation to clinical learning objectives or the development of clinical judgement.

Clinical judgement is described by Tanner (2006) as "the interpretation or conclusion about a patient's needs, concerns or health problems" (p.204), which is increasingly important in the contemporary public health arena. Tanner (2006) identified four core aspects of the process of "thinking like a nurse" (Tanner, 2006) which were associated with having advanced levels of clinical judgement. These four aspects were presented in the Clinical Judgement Model (Tanner, 2006) and consisted of noticing, interpreting, responding and reflecting. This model proposes that advanced clinical judgement enables a nurse to adapt to a changing clinical environment and undertake complex problem solving. Furthermore Shim, Park & Shin (2014) suggest that "the transference of clinical judgment into nursing practice is imperative to providing quality nursing care by more competent nurses" (p.72).

This pilot study will evaluate whether the use of Mask-Ed™ in clinical workshops assisted students in developing the four aspects of clinical judgement defined by Tanner (2006).

Aims:

- To explore the impact of Mask-Ed™ on the four domains of clinical judgement as defined by Tanner (2006).
- To inform future curriculum development in order to provide the optimal clinical pedagogy for undergraduate nursing students.
- To add to the body of knowledge regarding the broader use of Mask-Ed™, and its potential role in fostering clinical judgement in nursing students.

2. Methods

A. Study setting

This study was conducted in clinical workshops in a tertiary education setting. A Mask-Ed™ character was used in two different clinical scenarios over two workshop weeks. In the first workshop the scenario involved the administration of IV fluids, and in the second workshop the scenario involved administration of an IV bolus. The use of Mask-Ed™ in two weeks of workshops

allowed all students to experience the simulation technique on one occasion. Fifty percent of the workshops each week featured a Mask-Ed™ scenario, while the remainder of the workshops were taught as usual. Current practice within this University setting had been to use manikins.

B. Participants

All the students enrolled into a third year nursing unit were invited to anonymously participate in a cross-sectional survey (n=160). The survey was voluntary and anonymous. Prior to the workshops it was made clear to the students that the decision to participate in the study would not impact their grades in any way.

C. Data collection

The survey questions required students to self-rate their confidence and skill level against six key learning objectives presented in each workshop, A and B. The four aspects of clinical judgment presented in Tanner's Clinical Judgment Model (2006): noticing interpreting, responding and reflecting were used to develop the learning objectives for each workshop. Students were asked to rate their ability against the learning objectives for each session, numerical values were used with 0 representing no knowledge or limited understanding and 3 representing that the students felt that they totally got the concept/skill.

Participants were then asked some open questions such as "please comment on the use of Mask-Ed™ in the workshop". If they had previously answered yes to the question "did Mask-Ed™ enhance your learning experience? "then the students were asked "Please describe how Mask-Ed™ enhanced your learning experience? ". These questions were asked after workshop A and B.

Ethical approval was gained for the University of Canberra Human Research Ethics committee: HREC 15-37.

D. Data Analysis:

The survey gathered basic quantitative and qualitative data about the Mask-Ed ™ learning experience. The quantitative data was converted into radar charts for simple comparison to the control group (see Figures 1 and 2). The qualitative data was analyzed manually and themed independently by J.F and C.W; congruent with the approach taken by Braun & Clarke (2006).

3. Results:

There were 41 responses to the questionnaire after workshop A. A response rate of 25%.

Figure 1. Workshop A

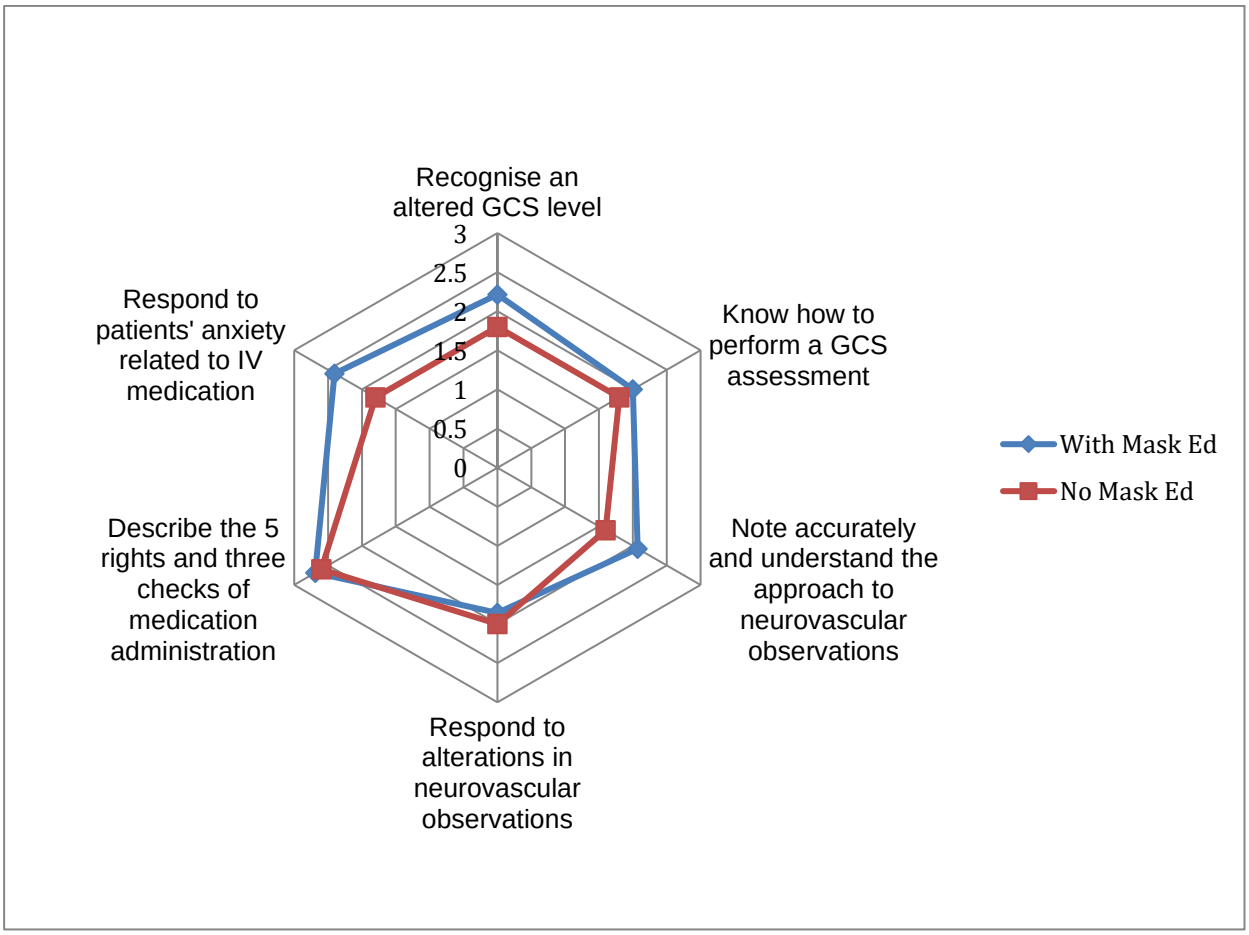
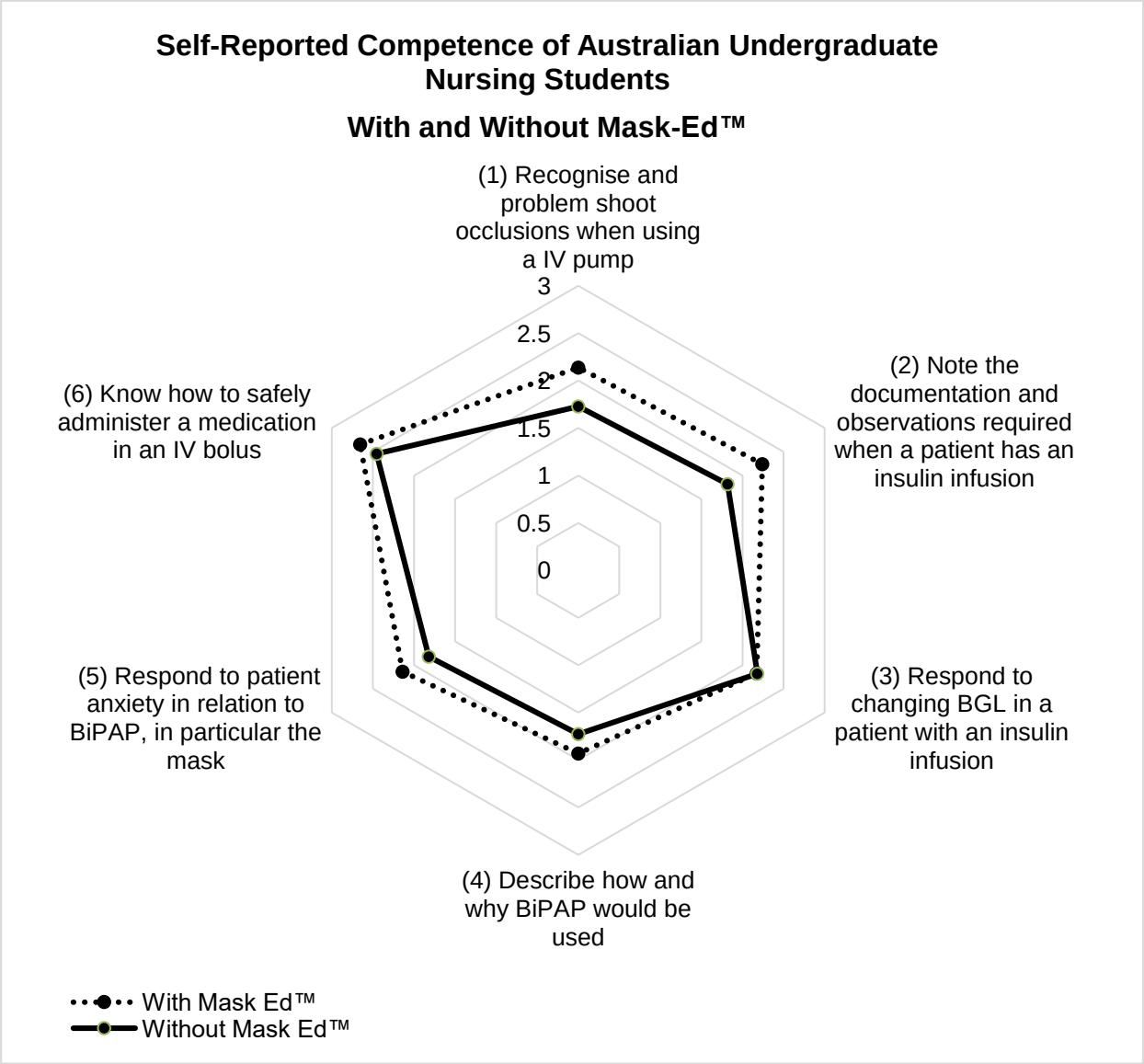


Figure 1 shows the responses for workshop A. For each of the learning objectives, with the exception of responding to alterations in neurovascular observations and describing the 5 rights and three checks of medication administration, the group that had Mask-Ed™ in the workshop rated themselves more confident than the group that did not have Mask-Ed™. For the two objectives confidence levels that no increase was found the students rated themselves as equally confident.

Figure 2. Workshop B



There were 47 responses to the questionnaire after workshop B. This equates to a 29% response rate. In the second week, as Figure 2 shows the students rated their confidence as higher when Mask-Ed™ was used. The exception was responding to a changing BGL in a patient with an insulin infusion and for this they rated themselves equally as confident as those who did not have Mask-Ed™ in the workshop.

The two graphs demonstrate that when Mask-Ed™ was used in a workshop, it appeared to enhance the whole workshop, increasing the student's confidence in skills not directly involved with the Mask-Ed™ character. This study was however, unable to prove statistical significance due to the low response rate.

The following thematic analysis further supports the trend towards increasing confidence after using Mask-Ed.

Thematic Analysis

Two main themes were identified by the researchers. The first was the impact on communication, and the second was the impact on learning.

a) Impact on communication

This was demonstrated through the chance to practice communication strategies “Mask- Ed™ really made me think about how to interact with the patient rather than simply carrying out a task”. Students embraced the fact that they didn’t “feel a dummy talking to a dummy” and felt that the character in the workshop provided a “real life clinical experience looking after a patient” this student goes on to explain that “their responses are not standard text book thus reflective of real life” and “that it allowed them to try and communicate with the patient in a manner that is appropriate to them”.

b) Impact on learning

The impact on learning was demonstrated through the description of the workshop which they stated was engaging, effective and better than dummies. One student commented that the use of Mask-Ed™ made it “less about uni and more about making the experience a good one for the patient”.

Another student suggested that ‘working on a real person focused their attention on the task far more than simply acting with a mannequin”. A student suggested that “it was totally different learning on a mannequin to real people”. Another student admitted that the experience was “intimidating” however it helped her to learn.

4. Discussion:

The results from this study suggest that students felt both enhanced confidence and an increased ability to both respond in clinical situations that required interpersonal skills and noticing patient cues, when Mask-Ed™ was incorporated into the workshop. The visual display of the data using radar charts (Figures 1 and 2) show an improvement in the student’s scores when the Mask-Ed™ technique is used. A difference is particularly noted in the areas of responding to the patient. This is an area that Tanner (2006) highlights in the definition of good clinical judgement in which the nurse is required to understand the illness experience as well as the pathophysiology and diagnostic aspect of care. Furthermore, recent evidence suggests that manikins are reducing students’ ability to respond in this way (Dean, Williams and Balnaves, 2017).

The qualitative data also supports the benefits of Mask-Ed™ in the workshops, which can be seen to enhance all four of the aspects of clinical judgement. Noticing, interpreting and reflecting were all found in the qualitative responses but by far the most notable was the aspect of responding. This can be seen in both themes, the impact on communication and education.

Previous research into Mask-Ed™ has reported its realistic and immersive properties (Kable et al., 2013; Reid-Searl et al., 2012). Other studies have also reported that students feel that they are taken out of their comfort zone and prepared for the clinical reality with the technique (Reid-Searl et al., 2012). The qualitative results from this study re-enforce these findings.

This study allows some insight into the ability of Mask-Ed™ to prepare students for clinical realities that has been demonstrated in other studies (Reid-Searl et al, 2014). An enhancement of clinical judgment and its components of noticing, interpreting, responding and reflecting are all evident from the use of Mask-Ed™ in this study.

It is recognized however, that this study uses self-report measures and while these measures are important for self-regulation in qualified staff, studies in students have found no link between self-reported confidence and clinical performance (Baxter and Norman, 2011).

This is a pilot study, with results that suggest a specific benefit in the development of interpersonal skills in a clinical context with Mask-Ed™ over none interactive simulation techniques such as manikins. The ability to respond is particularly important for students and is key to developing the ‘art’ of nursing (Nash, 2014).

5. Study Limitations:

Further studies are required to link students' feelings of clinical preparedness to their clinical outcomes. This pilot study was conducted on one site with one Mask-Ed™ educator, therefore it generalizability is limited. The response rate was also poor, a response rate of 25% and 29% for workshop A and B respectively, means that it is hard to make conclusive statements and to prove statistical significance in the difference between the groups. The use of self-report measures may not equate to clinical ability and further studies are required to confirm this link. It is also recognized that there are other interactive simulation methods that may yield similar results, however they were unavailable at the site the study was conducted. Comparative studies between Mask-Ed™ and standardized patients may strengthen the findings.

6. Conclusion:

This pilot study highlights the ability of Mask-Ed™ to influence the confidence of students in noticing cues and responding to patients. These are key component of clinical judgment. Larger studies are required to confirm this hypothesis with a larger samples and multiple sites. However, as clinical judgment is an important part of safe and effective nursing care, this study proposes that Mask-Ed™ is a potentially valuable simulation technique in preparing students for clinical practice.

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