



Impact of audio-visual storytelling in simulation learning experiences of undergraduate nursing students



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ABSTRACT

Background: Use of high fidelity simulation has become increasingly popular in nursing education to the extent that it is now an integral component of most nursing programs. Anecdotal evidence suggests that students have difficulty engaging with simulation manikins due to their unrealistic appearance. Introduction of the manikin as a 'real patient' with the use of an audio-visual narrative may engage students in the simulated learning experience and impact on their learning. A paucity of literature currently exists on the use of audio-visual narratives to enhance simulated learning experiences.

Objective: This study aimed to determine if viewing an audio-visual narrative during a simulation pre-brief altered undergraduate nursing student perceptions of the learning experience.

Design: A quasi-experimental post-test design was utilised.

Participants: A convenience sample of final year baccalaureate nursing students at a large metropolitan university.

Methods: Participants completed a modified version of the Student Satisfaction with Simulation Experiences survey. This 12-item questionnaire contained questions relating to the ability to transfer skills learned in simulation to the real clinical world, the realism of the simulation and the overall value of the learning experience. Descriptive statistics were used to summarise demographic information. Two tailed, independent group *t*-tests were used to determine statistical differences within the categories.

Results: Findings indicated that students reported high levels of value, realism and transferability in relation to the viewing of an audio-visual narrative. Statistically significant results ($t = 2.38, p < 0.02$) were evident in the subscale of transferability of learning from simulation to clinical practice. The subgroups of age and gender although not significant indicated some interesting results.

Conclusions: High satisfaction with simulation was indicated by all students in relation to value and realism. There was a significant finding in relation to transferability on knowledge and this is vital to quality educational outcomes.

1. Introduction

The use of high fidelity simulation in healthcare education is well established to the extent that the incorporation of high fidelity simulation is an integral component of any Bachelor of Nursing program (Foronda et al., 2013). Simulation has been shown to be an effective teaching method for select skills and knowledge gains (Foronda et al., 2013). However, a critique of high fidelity manikins in healthcare education relates to their unrealistic appearance (Barry et al., 2012) with some students unable to engage and relate with the inanimate object in an authentic manner. Literature relating to nursing student engagement with manikins is, however, largely anecdotal (Power et al., 2016). Evidence suggests that engagement with learning results in

improved knowledge retention and a deeper understanding of subject matter, which may be utilised for future practice (Wolff et al., 2015). The creation of an authentic and believable simulated learning experience that engages the learner is therefore optimal for maximal learning (Walsh and Van Soeren, 2012).

This study developed a learning and teaching strategy that designed to increase realism and subsequent engagement with the simulation experience among undergraduate nursing students through the incorporation of audio-visual (A-V) narratives. A-V narratives are short audio-visual productions (Guise et al., 2012) and in this case, with actors portraying aspects of a patient journey in a clinical situation. The use of A-V techniques and resources have been identified as highly effective teaching strategies that are frequently used in health education

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(Al-Shaer et al., 2011; Fero et al., 2010; Mcconville and Lane, 2006; Volandes, 2007). Ironside (2006) asserts that the use of narratives contributes to a deeper understanding of a situation or scenario subsequently leading to the ability to use and incorporate this learning in future practice. McAllister et al. (2013) further supported the use of narratives suggesting this methodology was facilitative in understanding patient contexts. A-V narratives are an effective framework to support deep learning (Moon and Fowler, 2008).

Recent research by Power et al. (2016) examined the use of A-V vignettes prior to completing a simulation experience to improve the participant learning experience (Power et al., 2016). This qualitative study reported increased student engagement with the manikin and improved student reflection on personal values and prejudices (Power et al., 2016). It also indicated an increased ability for students to suspend their disbelief, feel connected and be able to approach the manikin in a more understanding and empathetic fashion (Power et al., 2016). Connection with the manikin was also a finding supported by Lehtola (2007) who asserted that a narrative story improved student engagement and understanding of the context in which a simulation took place. The use of named characters provided credibility to the simulated experience and allowed students to relate to the situation and remember the learnings (Lehtola, 2007).

This study drew on the principles of narrative pedagogy in nursing to increase student understanding of the patient experience. Walsh (2011) explains that this method is different to storytelling, which is a recounting of sequence of events. Rather, the narrative is the way in which the story is told, therefore, manipulation of the context impacts on perception and understanding of the situation (Walsh, 2011). The A-V narrative was a five-minute recording using real actors to portray the patient, patient's wife and staff caring for the patient. The narrative comprised three short segments: the patient with his wife in a pre-admission clinic, the patient and his wife at home discussing concerns and, post procedure with the theatre nurse giving patient handover to the ward nurse. The context of the patient as a real world person with problems and concerns affecting family members designed to influence the understanding of the patient's story and the meaning that students attached to it (Diekelmann, 2001).

This study investigated how using an A-V narrative incorporated into the pre-briefing of a clinical simulation, influenced third year nursing students' perceptions of the simulation experience. Comparisons were made of student perceptions of the experience and perceived transferability, value and realism of learning between two groups - those who viewed an A-V narrative prior to undertaking the simulation and those who participated in a standard verbal pre-briefing. A review of relevant literature revealed limited research in the areas of narratives in simulation and this prompted this research.

2. Methods

The aim of the A-V narrative was to transform the artificial simulation environment to a real world representation of a clinical patient problem and context to facilitate active and engaged learning, and assist in connecting theory to practice for third year baccalaureate nursing students.

Specifically, overall aims of completing this study were:

1. Determine student perceptions of A-V narrative pre-brief information in simulated learning experiences and identify variances across subgroups of third year baccalaureate nursing students.
2. Determine if the implementation of A-V narrative pre-briefing in a simulation experience altered student perceptions of their ability to transfer learning to the clinical area.

2.1. Setting

This study was conducted across two campuses of a School of

Nursing in a large metropolitan university. The school offers a Bachelor of Nursing program and three double degrees (nursing/behavioural science, nursing/paramedic science and nursing/public health). The Clinical Simulation Centre (CSC) at both campuses has purpose-built rooms for pre and debriefing of students prior to and after a clinical simulation. The CSCs at both campuses have been designed to simulate a clinical care area and include a fully computerised high fidelity human 'patient' in a hospital style setting, with a viewing room and adjacent facilitator control room. Simulations are undertaken by students in groups of eight, with four being active participants and four students being observers. Simulations require students to complete some pre-reading in relation to the scenario. The simulation timeframe is a 60-minute period comprising of a 10-minute pre-brief, followed by 20 min of simulation. Students are guided through a 30 min debrief session conducted by a facilitator who is a registered nurse and trained in delivery of clinical simulation.

2.2. Participants

The population for this study was baccalaureate students enrolled in nursing degrees (either single or double). The study included a convenience sample of third year nursing baccalaureate students enrolled in a clinical capstone unit in semester 2, 2016. The simulation and debriefing sessions are a standard, non-assessed learning experience within this clinical capstone unit and all students enrolled in this unit were invited to participate in the study. Students were informed that participation was voluntary and that non-participation would in no way impact on their grade for the unit.

2.3. Ethics

Ethical approval for this study was obtained through the University Human Research Ethics Committee, approval number 16000069. All participants were emailed a participant information package. Participant information sheets were also available on the day of simulation. Return of completed surveys implied consent to participate in the study.

2.4. Design

This study used a quasi-experimental design and collected data using a post-test questionnaire. The instrument used was the Student Satisfaction with Simulation Experiences instrument (Abdo & Ravert). The questionnaire measured perceptions of value, realism and transferability of the experience with good reliability (Abdo & Ravert).

2.5. Procedure

All undergraduate nursing students in a second semester clinical capstone unit in 2016 were invited to participate in the study through announcements and emails delivered via the learning management platform. Prior to the simulation, students self-allocated to a simulation group as per standard procedure. Groups were then randomised using a computer generated program to either the control group (standard pre-brief) or intervention group (A-V narrative pre-brief). The intervention group watched and listened to an A-V recording of the patient's history, interaction with an admitting nurse, discussions between the patient and his wife and a post procedure handover by the nurse caring for the patient. The control group undertook verbal pre-briefing as per standard practice, which was a verbal handover of the patient condition. All students then participated in the same high fidelity simulation and subsequent debriefing.

The simulation was the same scenario for both control and intervention groups. The patient scenario involved a 65-year-old man with a history of diabetes and increasingly frequent episodes of chest pain, admitted for an elective coronary angioplasty. The students were

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