Review

A PLACE FOR SIMULATION IN PRIMARY HEALTH NURSING EDUCATION: WHAT DOES IT LOOK LIKE?

Josie Crawley & Dr Jean Ross

INTRODUCTION

> *It will prove difficult to establish a therapeutic relationship with a dummy, albeit one that is capable of bleeding, passing urine and uttering the occasional word while being injected, catheterized. prodded and poked in the course of the learning process.*
>
> (Foster & Hawkins, 2005, p.698)

Providing nursing students with quality learning opportunities in all health care settings is increasingly more challenging to obtain and sustain due to a growth in student numbers and a shortage of clinical placements. Simulation has developed as a response to these challenges to replicate the reality of clinical environments providing students with the opportunity to practice nursing assessment and nursing management in a safe space. This safe space is up for debate as highlighted in the above quote by Foster and Hawkins (2005) which raises the question as to the applicability of student nurses' interacting with a "dummy"? Therefore to make the simulation more realistic the context and place specific location in which the client is situated and the nurse visits is recognized as an essential feature in the simulation scenario. This paper describes the process of embedding primary health simulations in an undergraduate nursing curriculum to develop students' therapeutic communication skills to promote health and wellbeing.

Background

Student nurses need multiple opportunities to practice thinking and acting like a Registered Nurse (RN). Providing students with quality learning opportunities in all health care settings is increasingly more challenging to obtain and sustain due to a growth in student numbers and a shortage of clinical placements (Spence, Valiant, Roud & Aspinall, 2012; Bambini, Washburn & Perkins, 2009; Mannix, Wilkes & Luck, 2009). Furthermore, once a clinical placement is secured for a student, learning opportunities are dependent on factors such as the student/preceptor relationship, a time pressured environment, patient's/client's clinical presentations and the context in which the placement is situated. The context or physical environment coupled with distance from local and regional health services are stressed as a component of the simulation exercise. The aim of presenting this background information is to ensure health care planning is specific to the clients' physical, psychological, spititual and geographical context. Ross (2012) stresses that "knowledge about context is imporatant for nurses who work in urban as well as rural facilities" (p. 87)

As a response to these challenges, utilising simulation to teach nursing skills, assessment and management is rapidly gaining popularity as it offers a breadth of experience difficult to obtain in clinical placements and students can learn in a safe structured supportive environment (Bushy & Hewett, 2012; Lasater, 2011; Bambini et al., 2009). Simulation aims to replicate the reality of clinical placements and provides a settting for students to participate in a scenario, commonly termed 'simulation' and is generally used to complement clinical learning that occurs in health care contexts such as hospitals, clinics and communities (Jeffries, 2012; Ross, 2012). The following definition of simulation is provided by Bland, Topping and Wood (2011);

> *A dynamic process involving the creation of a hypothetical opportunity that incorporates an authentic representation of reality, facilitates active student engagement and integrates the complexities of practical and theoretical learning with opportunity for repetition, feedback, evaluation and reflection.*
>
> (p. 668)

To provide an authentic learning experience in simulation, actors or interactive manikins are used to replicate a real life scenario as closely as possible (Bushy & Hewett, 2012; Norman, Dore & Grierson, 2012; Bartlett, 2014). When using mannikins, the term used to describe the extent to which the simulation mimics reality is measured in the terms of low fidelity, moderate fidelity and high fidelity (Jefferies, 2012). Low fidelity referred to as task trainer or static mannikin does not have any computer interface and is a model in which the student practices a skill on a anatomical model, for example an arm for practicing wound management. Medium fidelity is a computer generated simulation using a mannequin that has been programmed to display clinical conditions such as blood pressure, respiratory rates in which the students can practice clinical decision making. High fidelity simulations are once again computer generated mannikins which allows the student to intervene in the delivery of care, for example as a clinical decision is made and treatment administered, in high fidelity simulation the student receives immediate feedback as the mannikin respondes to the treatment and the condition either improves, remains the same or deteriates the student can then judge as to whether their treatment was appropriate (Bushy & Hewett, 2012). These simulations enable students to see and feel many physiological parameters but are limited in that they are unable to display the full range of human interactions and encounters such as nonverbal skills and psychological withdrawal (Benner, Sutphen, Leonard, & Day, 2009). To provide more authentic human interaction, actors are frequently used, although they are unable to portray changing physiological parameters (Bushy & Hewett, 2012). Despite these constraints, when designing simulation, educators strive to mimic clinical reality as close as possible to provide an authentic student learning experience.

Simulation experience

Like many undergraduate nursing schools in New Zealand, simulation has a long history in our school with the use of role plays, laboratory sessions and exercises to teach communication and clinical nursing skills. The potential to use simulation for more than skill acquisition was recognized in 2007 when the interactive mannikin 'Nursing Anne' was bought to the front of the class of student nurses to demonstrate breath and heart sounds. The capabilities of this manikin to demonstrate basic physiological parameters and enable scenario based teaching provided another opportunity to prepare students for real patient care. To learn more about the possibilities 'Nursing Anne' could offer our nursing school, staff began attending simulation training and conference opportunities led by the producers of the mannikin. In scenario based learning the mannikin is programmed to mimic human physiological responses dependent on student practice, is able to talk by projecting the technicians voice, however is not able to show facial expressions or reactions.

In 2010 the School of Nursing received approval to re-develop an existing study room to suit our simulation requirements. This room included a one way dividing mirror where the lecturer is positioned to observe the simulation. Working within our budget, a security camera was installed to to film our students for debriefing purposes. The new simulation suite was ready for use for our first students in semester two of 2010, as an adjunct to the lower technological simulation happening regularly in primary health tutorials and skill acquisition in laboratories. It is in this simulation the context is stressed as a component of the simulation exercise to ensure health care planning is specific to the clients' physical, psychological, spititual and geographical background.

Year 2 students enrolled in the medical /surgical course trialled simulation scenarios for example, a patient experiencing chest pain. The course coordinator observed the scenario behind the one way mirror, provided the voice of the patient and debriefed the experience with the students. Course evaluations were heartening with 95% of students reporting simulation was challenging, interesting and provided opportunities for active participation and learning. Anonymous course evaluations completed by students at the end of each course provide both qualitative and quantitative data. These were promising with 95% of students reporting simulation was challenging, interesting and provided opportunities for active participation and learning.

Following the success of these first simulations, a combined primary/mental health simulation for year two students was added in 2011. This simulation involved a stressed mother visiting the local medical practice asking for sleeping pills and emphasised interpersonal skills and health promotion. Because this scenario required behaviors and non-verbal cues difficult to simulate on a manikin, students and lecturers were used to act in the client role partially due to financial constraints to pay for actors. However this led to problems with consistency and difficulty in controlling the scenario when the actor did not respond the way the simulation was designed. Using a microphone and ear piece for communication between actor and facilitator helps to address this (Keltner, Grant & McLernon, 2011). Our technician currently acts in the client role for many simulations requiring an actor, although this is being reviewed due to the time commitment this involves, as simulations require 30 minutes of 4:1 student/technician time, and each simulation is repeated eight times. The use of technician resource is more financially viable than lecturer resource; but is reliant on technician acting skills and availability and remains resource heavy. The adaptability of new technologies such virtual reality may offer some alternative strategies to portray the client role.

Simulation activity

Our nursing school delivers 15 small group simulations over four clinical nursing disciplines; medical, surgical, mental and primary health and is embedded in all three years of the Bachelor of Nursing Degree. We have expanded facilities, purchased an advanced simulator and employed a full time laboratory technician/teaching assistant to facilitate learning through simulation. Simulation complexity is stair cased throughout the three years to allow educators to empower students through the use of fading support. Parker and Myrick (2012) describe this process as a "graduated withdrawal of support or assistance as the students moves from the beginning phase (where others regulate their learning) to the final stage of self-regulation" (p.367). Students initially observe the educator, advance to undertaking aspects of the task, and then finally take control of the learning situation (Parker & Myrick, 2012). This process of transition to independent practice is replicated throughout the nursing student learning journey, including in clinical practice.

Each student is expected to prepare for simulation with an hour of directed online learning which comprises objectives, readings and access to resources related to the scenario. To participate in the simulation, students are assigned a role as student nurse, RN or relative. A fourth student observes and provides feedback during the debriefing session. Reassurance is provided to the student assigned the RN role that they aren't expected to have the knowledge of a RN they are there to support and work with the student. A lecturer or the technician plays the role of patient/client. Each role has an outline of key questions, challenges and issues to be raised while in the role. These resources are part of the package available to students as part of their preparation to reduce student anxiety and increase opportunity for students to practice positive learning.

Simulation debrief

Paramount to the success of the simulation is providing a debriefing session immediately after the simulation to provide an opportunity for students to explore their decisions and actions and apply their learning to nursing practice (Bushy & Hewett, 2012). Morse (2009) defines debriefing as a learning experience in which students reflect on their actions and link this to theoretical frameworks and didactic knowledge to integrate a new perspective for managing similar future situations. The skill of the facilitator in debriefing is crucial to learning outcomes and avoids putting the participants on the defensive (Bushy & Hewett, 2012). Dufresne (2006) recommends the facilitator utilize a conversational inquiry approach and perceive the students' actions as an intellectual puzzle to be solved. Otago Polytechnic lecturers facilitate and coach the students providing a process so students lead reflection in debriefing. This is consistent with researchers recommendations for debriefing (Reed & Corbette, 2017) with the Otago Polytechnic experience suggesting students appreciate having a framework or process of reflection, enough time to explore and appreciate links to practice frameworks and like to leave de-briefing with a clear, positive goal to work on to strengthen their practice.

Simulation in primary health

In year one, simulation begins with clinical tutorials that are run concurrently with a student visiting families, older adults and community resources. Role play exercises help the student to learn and explore how it feels to be a nurse, build relationships and be 'professional'. Students' learn to identify personal/professional boundaries and build awareness of cultural differences. In addition, students are introduced to the simulation suite by observing an introduction to simulation video and signing a confidentiality and engagement form. Following the introduction to simulation, students participate in a small group simulation involving assessment of a patient experiencing chest pain. The focus in the debriefing session is on subjective interviewing, assessment and handover of assessment findings.

Year two and three clinical courses each include two simulations as an adjunct to their clinical placement hours. Four primary health simulations are provided; three of these are based on the New Zealand Ministry of Health (MOH) national health targets around immunization, smoking and diabetes. The simulations have a low fidelity/technological focus and place a greater emphasis on the development of students' interpersonal skills, communication and empathy. The objectives emphasize working in partnership between student, RN and client and the use of motivational interviewing to promote positive health change and health promotion.

DISCUSSION

The rapid advancement in simulation technology over the last decade has enabled more opportunities to provide realistic student learning experiences in a safe environment through the provision of experiential learning and reflective practice (Bartlett, 2014; Bushy & Hewett, 2012). Students report feeling more confident and competent following simulated learning experiences (Lewis & Ciak, 2011; Bambini et al., 2009). However, Berragan (2011) warns the seduction of these new capable technologies may move us away from our initial views of the undergraduate curriculum which emphasizes relational,holistic care. Simulations are frequently "technologically driven and crisis based" (Limoges, 2010, p 61) and may inadvertently focus on psychomotor skills at the expense of interpersonal relationships (McGovern, Lapum, Clune & Martin, 2012). Limoges (2010) recommends constructing the simulated patient to rebalance the art of nursing towards a holistic approach of wellness in body, mind and spirit to avoid the risk of developing task centred practioners, a concern also mentioned in other literature (Berragan, 2013; McGovern et al., 2012; Chen, 2011; Foster & Hawkins, 2005). Otago Polytechnic has responded to this movement by developing primary health simulations that require students to partner with their client, to work together for wellness. To engage students in thinking holistically , human actor clients provide emotional cues, the scenarios and roles provide context and back story requiring students to develop the art of nursing and communication, rather than rely on task centered skills.

In our nursing school, to provide a holistic approach the primary health simulations use actors as they are able to respond with non-verbal cues and provide emotional nuances, which manikins cannot display. The scenarios are designed to complement the high fidelity medical/surgical simulations by highlighting the importance of holistic assessment, that includes not only the client but their family/significant others. Working in partnership is emphasized along with the need for primary health care nurses to be opportunistic with nursing care and health promotion. In many simulations students are required to respond to an emotional client who may be crying, angry or experience English as a second language which may raise one's self-awareness which can be difficult and bewildering at times, as questions are raised and explored. Anecdotally most Otago Polytechnic students don't perceive somulations to be "real" but do value the safe learning opportunity, and say this aids building effective practice when in clinical.

By providing a safe environment with supportive facilitation where students can acknowledge and explore their values and beliefs during debriefing allows students to make sense of primary health issues and practice, including emotional behavior, socio-cultural determinants of health and developing empathy. If students are able to deal with their own feelings appropriately, they will be able to more confidently deal with others competently and safely. Effective learning can be enhanced through simulation as a more interpretative approach to learning facilitates the student to be able to make sense and find meaning in their learning opportunities (Jefferies, 2012).

One of the big challenges for nursing students is learning how to transition into professional roles and behavior. Transition is defined as "movement or passage from one position, state, stage, subject, concept, to another" (Golan, 1981, p.11). For nursing students, it is about moving on from merely surviving new primary health clinical situations to coping and caring compassionately within complex nursing realities. By providing simulation opportunities for students to focus on their interpersonal skills and communication they learn how to be a nurse as well as the skills of nursing (Berragan, 2011). Developing competence and confidence in interpersonal skills not only alleviates students' anxiety and vulnerability but the vulnerability of others. As new information and expertise is gained and practiced in simulation, students are enabled to interpret similar situations with more understanding and less stress (Admi, 1997).

CONCLUSION

Simulation is a learner centered teaching strategy which effectively allows students active participation in developing their practice and complements the learning which occurs on clinical placements. Anecdotal student feedback reiterates that students feel more prepared for clinical placements after completing simulations. The combination of pre-simulation work, the simulation experience, and debriefing with reflection on their learning, increases their confidence and knowledge. For some it highlights what they need to further explore, whether that be gaps in their theoretical knowledge or social and emotional competence. Providing students the opportunity to reflect on their learning experience and giving feedback on their practice in a safe place will enhance student learning whether they are in simulation or on clinical placement. By using reflection and engaging students in active clinical discussions, nurses mentoring students in practice and education are in a prime position to support students to transition from a first year novice into a beginning professional growing in confidence, independence and expansion of role.

A carefully planned primary health simulation which requires the student to establish meaningful relationships in context can be a valuable addition to preparing students for the reality of establishing primary health care practice in different contexts. Simulating living breathing human beings with emotions, allows students to practice the art of nursing by responding behaving and acting like a nurse, preparing them for the complex realities of health care in numerous clinical placement settings.

Josie Crawley has been involved in nurse education in both the community and education institutions for over 25 years. She is passionate about opportunities for health promotion in primary health; and her research platform explores the place of narratives within nursing education.

Dr Jean Ross, is a registered nurse and principle lecturer in the School of Nursing at Otago Polytechnic, Dunedin. Jean's interests focus on the concept of 'place' and community development, particularly rural communities. Jean facilitates rural community knowledge, the place of image and the powerful effects the use of image can have when combined with written text.

Correspondence to Josie Crawley, School of Nursing, Otago Polytechnic, Private Bag 1910, Dunedin, New Zealand. Email: josie.crawley@op.ac.nz

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