



Midwifery education in practice

Simulation workshops with first year midwifery students

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ABSTRACT

Simulated teaching methods enable a safe learning environment that are structured, constructive and reflective. We prepared a 2-day simulation project to help prepare students for their first clinical practice. A quasi-experimental pre-test – post-test design was conducted. Qualitative data from the open-ended survey questions were analysed using content analysis. Confidence intervals and p-values were calculated to demonstrate the changes in participants' levels of understanding/ability or confidence in clinical midwifery skills included in the simulation. 71 midwifery students participated. Students rated their understanding, confidence, and abilities as higher after the simulation workshop, and higher still after their clinical experience. There were five main themes arising from the qualitative data: having a learning experience, building confidence, identifying learning needs, developing communication skills and putting skills into practise. First year midwifery students felt well prepared for the clinical workplace following the simulation workshops. Self-rated understanding, confidence and abilities in clinical midwifery skills were significantly higher following consolidation during clinical placement. Longitudinal studies on the relationship between simulation activities and student's overall clinical experience, their intentions to remain in midwifery, and facility feedback, would be desirable.

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Background

There is limited knowledge on the future of the midwifery workforce in Australia. Future projections instead focus on nurse shortages (Health Workforce Australia, 2012), and other studies concentrate on the reasons for attrition in midwifery (Pugh et al., 2012) and report the characteristics of Australian midwives (Bogossian et al., 2011). There are difficulties in collecting accurate midwifery workforce data, although, like nurses, they are ageing. The average age of midwives in 2014 was 48 years (Australian Institute of Health and Welfare, (2015)) which indicates that many will retire within the next two decades.

Many midwives choose not to remain in their jobs, and decisions to leave the workforce can occur soon after completing their degrees (Sullivan et al., 2011). Reasons for this are multifactorial, but include an inability to provide ideal standards of care, a lack of managerial support and recognition of their work, and

discrepancies between aspirations and actual workplace activities (Ball et al., 2002). It is known that Bachelor of Midwifery (BMid) students in the first year of their program often feel a degree of culture shock when introduced to the clinical environment of a maternity unit (Cummins et al., 2014) which can lead to high attrition rates in the first year at university. One way to address this is to prepare the students as much as possible prior to entering clinical settings through experiential learning activities using simulation.

The use of simulation as a method of teaching and learning is gaining momentum and popularity within midwifery education. Simulation is defined as the creation of an event, situation, or environment that closely mirrors what one would encounter in the 'real world' (Cioffi, 2001). Key aspects of learning through simulation are the ability to repeat practice to consolidate learning of technical and non-technical skills and develop competence (Issenberg and Scalese, 2008). Midwifery is a practice-based discipline and the BMid degree requires that the students undertake clinical practice. To prepare students for clinical practice a number of teaching strategies are implemented, including simulation.

Skills acquisition in midwifery has changed from the serendipitous traditional 'apprenticeship' way of learning to an approach

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that encompasses highly authentic learning experiences using simulation (Cant and Cooper, 2010; Cooper et al., 2012). Safe woman-centred care and development of essential team skills (communication; leadership) are enabled through simulated learning experiences. These assist students to develop a schema of practice in order to assist with socialisation into the workplace.

Simulation is recognised as an engaging technique which leads to effective learning. Various forms of simulation may be used, such as role play, case studies, computer simulations, or mid to high-fidelity mannequins (Arthur et al., 2011; Kelly et al., 2014; Levett-Jones and Lapkin, 2014). Human simulation in particular aims to imitate reality whilst offering a skills-based clinical experience in a dedicated environment (Durham and Alden, 2012).

The benefits of simulation as a strategy for teaching and learning are well documented. Benefits include the ability to combine key technical and non-technical skills in a learner-centred and student active way (Kneebone et al., 2007; Melnyk, 2008); provide a stimulus for reflecting on clinical practice (Nielsen et al., 2007); and, provide a means of presenting clinical situations infrequently seen in practice (McCaughy and Traynor, 2010; Weaver, 2011). Students who participated in simulations utilising case studies and role-play have reported increased self-efficacy following these learning opportunities (Kameg et al., 2010; Tawalbeh and Tubaishat, 2014; Thomas and Mackey, 2012). Simulation has positively improved knowledge retention (Broussard, 2008), reinforced technical skills including patient assessment (Hayden, 2010), and improved clinical performance (Meyer et al., 2011). Students find it enjoyable, satisfying and can recall experiences during subsequent clinical practice (Guhde, 2011; Rochester et al., 2012).

Simulation based learning has been enhanced in Australia since the establishment of the Health Workforce Australia (HWA) in 2009. This body, through the Simulated Learning Environments National Project, has subsequently released a report on midwifery simulation education (HWA, 2010). Successive studies from the HWA report have found that simulation was widely used, with up to 17% clinical program hours allocated (Bogossian et al., 2011), teaching a wide-ranging number of skills with varied pedagogical approaches (Cooper et al., 2012). An earlier study by Cioffi (2001) explained how midwifery students reached decisions more quickly and had higher confidence levels in labour and neonatal care after simulation based learning activities. However, it has been acknowledged that simulation techniques cannot replace clinical practise and holistic, woman-centred, relationship-based care which is central to midwifery (McKenna et al., 2011).

Empirical studies have demonstrated learning is strengthened in simulation-based education through debriefing (Mahmood and Darzi, 2004; Savoldelli et al., 2006; Shinnick et al., 2011). The use of deliberate feedback during and after simulation is highly recommended (Cant and Cooper, 2010; Warland, 2011) and should be structured, constructive and reflective (Cantrell, 2008). Debriefing and feedback discussions allow examination and self-reflection, are critical to student learning, and may be the most important part of the overall simulation experience (Dreifuerst, 2012; McGaghie et al., 2010; Savoldelli et al., 2006; Shinnick et al., 2011).

This project introduced a simulation workshop for first year midwifery students. The purpose of this study was to determine whether pre-clinical simulation workshops enhanced student knowledge, skills and satisfaction with their first midwifery clinical placement. The study's overarching aims were to help students feel capable in their own practice and decision making, and assist with the socialisation within the clinical workplace. Ethical approval was granted for this study by the University of Technology Sydney Human Research Ethics Committee (HREC 2014000120).

Methods

The simulation (SIM) project consisted of a facilitated two-day simulation workshop for the first year Bachelor of Midwifery students at a large urban university in Sydney. A quasi-experimental pre-test – post-test design was conducted (Burns and Grove, 2005; Minichiello et al., 2004) where the students were asked to complete an online survey before the simulation project, immediately afterwards and then three weeks later after they had completed their clinical placement. Pre and post-test survey design has been commonly used to evaluate clinician's knowledge levels following an intervention program. For example, the assessment of improved knowledge from fetal welfare, obstetric emergency and neonatal resuscitation training program (FONT) (Cooke et al., 2010).

The students in this study were in the first year of a 3-year Bachelor of Midwifery degree and were undertaking their first clinical subject and related clinical placement. The objectives for the subject, named "Midwifery Practice 1: preparation for practice", included conducting physical and mental health assessments of a childbearing woman and her newborn baby. The subject contained both theoretical lectures and simulated practice, including Observed Structured Clinical Examinations (OSCE) in the midwifery laboratories on campus. Within the subject, which incorporated a number of simulation experiences each week, the students were expected to relate the findings of assessments to the normal ranges and report any deviations. The simulation project described in this paper was built into this subject.

The intervention

Five simulations were undertaken, by ten groups of 7 students. These were based on antenatal, birth, postnatal and neonatal care scenarios. All students took part in playing the parts of the midwife, mother, partner, or the student midwife, with predefined roles, actions and skills to convey. The groups of students rotated around each room with simulations set up to represent the hospital setting complete with props. For example, in the labour and birth room the equipment included a bean bag, mat, birth pool, chair, couch, bed, pinnards stethoscope, a Doppler and a birth pack with a task trainer (Sophie's mum by Model-med International) that simulates normal birth. For the neonatal simulation, an actress was employed to portray a new mother so that students could interact with and assist her to provide basic newborn care. Each simulation and debrief took 1 h, and were facilitated by clinical midwifery educators and lecturers. In the 3 weeks prior to the simulation workshop, students had practised all the clinical skills required for each scenario apart from the facilitation of normal labour and birth; students had only viewed a video of this skill before the simulation workshop.

Prior to the simulation, facilitators provided a 10-min briefing together with a copy of the written scenario for each student in the group. The activities were confidential to those within the room hence they could make errors without any consequences. The briefing consisted of reassuring the students they were in a safe environment, an introduction to the equipment and outline of the case. The students decided amongst themselves the role they would adopt for the scenario and each wore a lanyard depicting their role (Disler et al., 2013). The students completed the scenario in 15–20 min and then de-gowned or removed props to come out of their role for a debriefing period of 40 min (Box 1). During the debriefing the students had the opportunity to discuss their experiences with the respective role/s. The actress playing the mother of the neonate also gave feedback to the group.

The facilitators of the groups all had clinical experience in debriefing, but had not attended formal training. Two were

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