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Staff perception of the sustainability of a mature simulation program in nursing and midwifery education: A phenomenological analysis

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ABSTRACT

Background: As an established pedagogy for teaching clinical nursing skills, the use of simulation in nursing and midwifery education continues to increase globally. In Australia, government incentives for staff development, capital equipment and scenario provided initial impetus for introducing simulation into nursing programs. However, a mature simulation program requires ongoing investment in staff and resources. Without appropriate commitment from educators and organisations, a likely decline in the quality of simulation activities may have a direct impact on student learning.

Purpose: This study sought to explore the views and experiences of nursing and midwifery academics involved in delivering a simulation-based education program in a maturation phase.

Method: In this qualitative study, interpretative phenomenological analysis was used to inform data collection and analysis. Data were collected through semi-structured audio-recorded interviews with 10 faculty staff in a tertiary school of nursing and midwifery.

Results: Four main themes related to simulated learning were abstracted from the data: perceptions and reactions, inconsistent customs, pedagogy of simulation-based education, and collateral opportunities. The findings are located within the context of a maturation, rather than introductory, phase of delivering simulation-based education in a tertiary education setting.

Conclusions: A mature simulation program may be undermined by ageing equipment and scenarios, and facilitators whose skills have not been maintained. Existing simulation activities require ongoing organisational support and investment. The development and introduction of minimum competency levels for facilitators and standardised measures of quality in practice are indicated, to improve simulation practice in the education setting.

1. Introduction

Simulation is an established pedagogy for teaching clinical nursing skills (Cantrell et al., 2017; Sundler et al., 2015). The use of simulation in nursing and midwifery education continues to increase worldwide, as it offers students the opportunity to gain essential knowledge and skills, while developing confidence and critical thinking (Livesay et al., 2015; Sundler et al., 2015; Zapko et al., 2018). Simulation comprises a range of approaches and scenarios, including the use of manikins and/or actors, role-plays, games and virtual reality (Ker and Bradley, 2010; Levett-Jones et al., 2017). To be effective, simulation-based education (SBE) should reflect reality, while providing a safe and supportive environment for learning in which students can practice skills without fear of causing harm to themselves or others (Boese et al., 2013; Kelly et al., 2016).

It is the responsibility of nursing faculty to maximise student learning during SBE (White, 2017). However, the content and delivery of SBE depends on the setting, resources and individual simulation facilitators. Uneven distribution of expertise and resources across education settings and providers, coupled with varying perceptions and practices among simulation facilitators, frequently result in a lack of consistency of practice (Akhtar-Danesh et al., 2009; Cantrell et al., 2017). This may be more likely to occur in the maturation phase of SBE, as the initial investment in resources and staff has given way to business-as-usual. The maturation phase is heralded when the preceding developmental activities slow and evaluation reveals less call for revision. The mature phase is characterized by minor tweaking of simulation content as flaws have been eliminated and presenters are familiar with content and flow (Bowling, 2001). Equipment may become outdated, while the space and facilities to conduct SBE may be

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compromised over time (Livesay et al., 2015). Losing champions who were central to the initial planning and implementation of a project may also affect its sustainability (Salsberg et al., 2017). Although the International Nursing Association for Clinical Simulation and Learning (INACSL) (2016) recommends continuing education and assessment of facilitation skills, it is not uncommon for staffing changes and/or different skill levels to affect the quality of SBE delivery (Al-Ghareeb and Cooper, 2016; White, 2017). Decreased enthusiasm for the program suggests time to renew and revise and that the program is progressing to the decline phase. The simulation program under study had been operating for seven years at the time of the research. The initial four years were characterized by growth and development and supported by a simulation coordinator who co-authored scenarios and organized staff training in simulation.

Much has been written about designing and introducing simulation initiatives in nursing education (Cantrell et al., 2017; Kelly et al., 2016). However, less is known about the complexities of maintaining mature SBE programs. Currently there is a dearth of literature on the longevity of robust simulation based education programs. This study sought to explore staff perceptions of the sustainability of a mature program where a long mature phase is desirable prior to the renewal and revision required when the program enters the decline phase.

The effectiveness of SBE in nursing and midwifery education, particularly in undergraduate curricula, is supported widely in the literature (Kelly et al., 2016; Sundler et al., 2015; Thidemann and Söderhamn, 2013; Zapko et al., 2018). For staff and organisations, SBE may optimise faculty resources (Berndt et al., 2015) and provide a positive return on investment of simulation education for new nurses in the hospital setting (Zimmerman and House, 2016). For students, SBE provides the opportunity to develop critical thinking and reasoning, and for reflection (Boese et al., 2013). Importantly, the facilitator's demeanour has been shown to motivate learning and instil confidence in students (Sittner et al., 2015). In a study into undergraduate nursing students' experiences of being assessed in clinical simulation laboratories, Sundler et al. (2015) found that SBE was experienced as a valuable learning opportunity, regardless of whether students passed or failed. Within this setting, students benefited from being able to reflect and receive feedback on different simulated scenarios (Sundler et al., 2015). Debriefing is a core component of SBE, as it helps students to bridge the theory-practice gap (Kaddoura, 2010). Through theory-based debriefing, students explore the experience and process of SBE, review the outcomes achieved and apply the scenario to clinical practice (Jeffries, 2015; Zapko et al., 2018). Thus, students' confidence and clinical judgement improve in a safe, collaborative team environment (Berndt et al., 2015; Brady, 2011).

Despite its effectiveness as an education tool, however, barriers remain at the introduction and maintenance stages of SBE. These include the time required by academics to prepare and deliver SBE, and shortages of space and resources (Al-Ghareeb and Cooper, 2016; Berndt et al., 2015; Livesay et al., 2015). While the costs associated with expensive simulation tools continue to elicit debate (Al-Ghareeb and Cooper, 2016; Levett-Jones et al., 2011), the disproportionate investment of time and money at the establishment stage, compared to ongoing maintenance and support for SBE, has also been reported (Adamson, 2010). Common challenges experienced after the initial SBE investment and implementation activities include ageing equipment and inconsistent staff training in different simulation modalities (Adamson, 2010; Livesay et al., 2015). In addition, essential ongoing technical support is often not available, particularly if the type or use of technology is unique (Duncan and Larson, 2012). Thus, Jones and Hegge (2007) caution that simulation technology may not be used to its fullest potential if appropriate and ongoing support systems are not readily available.

The beliefs, confidence and/or competence of facilitators in simulation are additional influencing factors in the adoption and maintenance of SBE (Akhtar-Danesh et al., 2009; Jones and Hegge, 2007; Livesay et al., 2015). Akhtar-Danesh et al. (2009) reported that nursing faculty members generally supported simulation equipment and simulation as a strategy for teaching undergraduate nurses. A study into the effects of different levels of simulation in undergraduate clinical teaching on faculty capacity highlighted the importance of adequate staffing to support the simulation environment and maintain quality standards (Richardson et al., 2014).

SBE was introduced into the nursing curriculum at a tertiary education provider in Melbourne, Australia, in 2009. At the time, a study was conducted to understand the perceptions, knowledge and experience of academic staff towards the use of simulation in nursing and midwifery education (Livesay et al., 2015). Staff received professional development and support when SBE was introduced. It is now considered timely to evaluate the maturation of the program, with a view to identifying strengths and weaknesses of the pedagogy in the discipline of nursing and midwifery. The focus of the current study was on the maintenance, rather than introduction, of SBE into a curriculum. The specific aims were to identify barriers and enablers to using SBE, ascertain the support required for SBE and understand how staff perceive SBE at its current stage.

2. Method

Data collection and analysis were informed by interpretative phenomenological analysis (Smith and Osborn, 2008). The main aim of researchers who use IPA is to assess participants' unique subjective experiences of the phenomenon under study. It is especially useful for understanding process and change, as it allows a comprehensive understanding of participants' lived experience (Smith, 2004).

2.1. Data collection

In IPA, qualitative data are collected through individual interviews. Semi-structured interviews are frequently used in the healthcare field, as they allow the researcher to use open, direct questions to elicit participants' experiences and the meaning they give to them (Kvale and Brinkmann, 2015). While the questions are contained in an interview schedule (or *aide memoire*), the style, pace and sequencing of questions can be adapted to evoke the fullest possible responses from participants (Qu and Dumay, 2011).

Ethics approval to conduct the study was obtained from the Human Research Ethics Committee. All staff within the Nursing & Midwifery team at a Melbourne University were sent an email and invited to participate in the study. Data were collected between January and May 2017. Participants provided written consent to participate and were informed of their right to withdraw from the study, without penalty, at any time. A convenience sample of 10 nursing and midwifery academics and educators were recruited to participate in the study. Staff were interviewed in the privacy of their own office at a time that was mutually agreed on by both interviewer and interviewee. Inclusion criteria were: staff working in the entry to practice programs of nursing or midwifery who had used simulation based education at this University. All participants were using the same facilities although delivering a range of simulation experiences. Staff training and preparation for simulation was varied according to where and when it was delivered. Interviews were audio-recorded and transcribed verbatim. Data were de-identified to maintain confidentiality. Using an interview schedule (Table 1), the questions moved from general to more specific questions. The open-ended nature of questions in one-on-one interviews encourages depth and vitality, while allowing new concepts to arise in discussions (Misoch, 2015).

2.2. Data analysis

In line with Smith and Osborn's (2008) approach, data analysis was undertaken in five phases. First, transcripts were read and re-read to