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Review Article

Simulation-Based Learning in Australian Undergraduate Mental Health Nursing Curricula: A Literature Review

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KEYWORDS

simulation;
mental health nursing;
outcomes;
debrief;
critical thinking;
clinical reasoning;
standardized patients;
clinical placement

Abstract

Background: Simulation-based learning has been adopted by nursing education providers at an unprecedented pace (Edgecombe et al., 2013; Hall & Tori, 2016). Although its use is increasing in mental health nursing curriculum it is still often omitted. As a result it was considered desirable to review and report on the literature that is available on mental health simulation in particular relating to the outcomes.

Method: This literature review searched several relevant online databases including JBI, Cochrane Library, MEDLINE, CINAHL, Psych Info, Science Direct, ProQuest, Ovid and Web of Science and the search engines of Libsearch, Google Scholar, Google and Library search in order to capture relevant literature and research. Forty-five studies were included in the review.

Results: The results found that high fidelity simulation had the outcomes of knowledge gains, improved communication skills, increased confidence, increased satisfaction, decreased anxiety, increased critical thinking and clinical reasoning, increased psychomotor skills and empathy.

Conclusions: High fidelity simulation-based learning provides a valuable tool for teaching undergraduate mental health nursing curriculum and is accompanied with many desired outcomes. Consideration should be given to mandating simulation-based learning as part of the undergraduate nursing curriculum in Australia.

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Introduction

Simulation-based learning has been adopted by nursing education providers at an unprecedented pace and become a mandated

part of undergraduate nursing curricula in some countries (Edgecombe et al., 2013; Hall & Tori, 2017). It is used in many Australian undergraduate nursing curricula and offers significant positive outcomes for students and, ultimately, consumers (Kameg, 2010). Simulation-based learning has been described “as a technique, not a technology to replace or amplify real experiences with guided experiences, often immersive in nature that evokes or replaces the real world in a fully interactive fashion” (Gaba, 2004, p. i2). The origins of

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simulation-based learning were in aviation and the military, but it soon became an integral part of the health care industry with the debut of the first mannequins in the 1960s (Edgecombe et al., 2013) and “the tools being refined further by the 1980s with the introduction of high-fidelity human patient simulators” (Eggenberger & Keller, 2008, p. 42). Simulation can take many forms and vary from low-fidelity case studies and part task trainers to high-fidelity mannequins or standardized patients (SPs). This research aims to explore the learning outcomes for undergraduate mental-health nursing students exposed to simulation-based learning.

Key Points

- Simulation-based learning provides a valuable tool to teach mental health to undergraduate nurses.
- Outcomes of simulation include: knowledge gains, increased communication skills, satisfaction, confidence, psychomotor skills, empathy, critical thinking and decreased anxiety.
- Mental health simulation should be included in undergraduate nursing curricula.

Background and Rationale

In 2008, Health Workforce Australia (HWA) was established by the Council of Australian Governments to expand simulated learning environments for health ed-

ucation (HWA, 2010). The outcomes of simulation-based learning have been the object of research for many years; however, it remains in its infancy in the delivery of Australian nursing education. A literature review was undertaken to explore the extent and range of research into the outcomes of simulation-based learning in mental health nursing curriculum and to identify research gaps for future study. Quantitative, qualitative, and mixed methods literature was reviewed to identify key concepts in the research (Davis, Josephsen, & Macy, 2013).

Types of Simulation-Based Learning

Many types of simulation exist, ranging from low fidelity to high fidelity. Fidelity is defined as how closely the experience reflects real-life situations; that is, the greater the fidelity, the greater the immersion and the higher the levels of learning achieved (Engström et al., 2016).

Part task trainers are equipment or anatomical body parts designed for training the learner in a particular task, usually a specific clinical psychomotor skill. The use of low-fidelity task trainers allows learners to become competent in certain skills prior to performing them on real patients (Decker, Sportsman, Puetz, & Billings, 2008). This type of simulation-based learning offers psychomotor skills development but no other benefits to mental health nursing.

Computer- and Web-based programs provide a medium-fidelity experience in which learners can interact with a situation and receive feedback related to their actions. Such programs allow educators to tailor the learning context to the needs of students and offer the advantage of providing for assessment at times convenient for learners. Learners' progress can be monitored and competencies are easily evaluated through the “use of case scenarios that require the integration of procedural and critical-thinking skills” (Issenberg, McGaghie, Petrusa, Gordon, & Scalese, 2005, p. 25).

Virtual reality simulators offer a similar but high-fidelity experience in which the learner can complete more complex (Lloyd, Lake, & Greenberg, 2004). They can be programmed to provide multiple case scenarios, allowing individuals to demonstrate a procedure with patients of different ages in multiple situations. In mental health, SP scenarios have extended into the virtual world via video and DVD technology, which is being used to create audio-visual vignettes and the development of virtual patients and case studies (Guise, Chambers, & Välimäki, 2012).

Human patient simulators (HPS) are high-fidelity, interactive computer-controlled technological mannequins capable of realistic physiological responses like respiration, sweating, breath sounds, pulses, and heart sounds. HPS are capable of recording data and some are able to videotape student responses and reactions, thus providing precise accounts for debriefing (Hughes, Durham, & Alden, 2008). HPS also allow facilitators to control verbal responses from different locations, but they remain limited by their inability to show the para verbals of communication.

Better suited to the learning pedagogy/andragogy for mental health students are high-fidelity simulated or SPs. A SP scenario integrates the use of case studies and role playing, with volunteers or paid actors taught to portray patients in a realistic and consistent manner and provide valuable feedback to students (Becker, Rose, Berg, Park, & Shatzer, 2006). Created by Burrows in 1963, SPs were first developed for medical students, training them to demonstrate appropriate communication skills while undertaking interviews and physical assessments (Decker et al., 2008). Although HPS are able to show physiological responses, it is their inability to show emotional responses and nonverbal communication that makes SPs the preferred option in the mental health worker's realm (Alexander & Drearsley, 2013; Brown, 2008). SPs address the absence of the human element by generating individual responses to a disorder and responding to interactions with students (Alexander & Drearsley, 2013). They can enable the student to establish rapport and create a therapeutic relationship. Therapeutic relationships may also be undertaken more effectively in the simulated environment, as research suggests that the third-party observation required in clinical placement hinders a student's ability to establish a relationship with the client (Alexander & Drearsley, 2013; Kameg, 2009). This type of simulation is most effective for

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