Title: A scoping review of the integration of ethics education in undergraduate nursing high-fidelity human simulation-based learning

Abstract

Aims and objectives: To systematically assemble, examine and map the extant literature pertaining to the integration of ethics education in high-fidelity simulation-based learning experiences in nursing undergraduate programs.

Background: The value of ethics education for undergraduate nursing students is well established in the literature. Whether high-fidelity human simulation (HFHS) supports the development of ethical reasoning, or positively impacts the acquisition of ethical knowledge and reasoning skills in undergraduate nursing students is inconsistently addressed.

Design: A scoping review was conducted using the Arksey and O'Malley framework.

Method: CINAHL, ProQuest Nursing & Allied Health Source, ProQuest Dissertations & Theses A&I, MEDLINE, Web of Science, ERIC, Scopus, PsycINFO, and the Joanna Briggs Institute EBP databases were searched for English language manuscripts published between 2012-2020. The PRISMA-ScR was used.

Results: Eight papers that met the inclusion criteria were extracted for this review. Three broad categories were identified: the *'what'* in ethics education, the *'how'* of ethics education and, the *'when'* of ethics education in high-fidelity human simulation.

Conclusion: The integration of ethics education into simulation-based learning has the potential to positively promote nursing students' ability to develop knowledge of and skills in ethical practice. However, the inclusion of ethics education scenarios in HFHS is a relative new teaching innovation in undergraduate nursing education. As such, there continues to be no consensus on

the ‘what’, ‘how’ or ‘when’ of ethics education for best practice in ethics education for undergraduate nursing programs.

Relevance to Clinical Practice: Quality improvement processes and research studies are needed to determine: the types of ethical dilemmas and debriefing sessions and optimal timing of HFHS ethics simulation in undergraduate nursing education, student support needed for running HFHS, and the learning needs of nurse educators seeking to incorporate ethics within HFHS.

Nurses face ethical dilemmas in everyday practice, yet little research has examined the best practices for teaching nursing ethics and preparing undergraduate nursing students to be ethically competent (Hoskins, Grady & Ulrich, 2018). Simulation-based learning has been widely adopted by undergraduate nursing programs across Canada in order to foster the development of clinical competence (Cant & Cooper, 2017). Nurse educators have also begun to use simulation as a teaching approach to help students develop ‘non-technical skills’ such as cognitive and social skills (Pearson & McLafferty, 2011). Simulation-based learning may offer students the opportunity to develop the skills and competencies required to negotiate complex patient situations, and to deal with the ethical dilemmas arising in patient care situations (Buxton, Phillippi, & Collins, 2015; Hinchcliffe Duphily, 2014). However, ethics education has only recently been included as a focus in HFHS in undergraduate nursing programs (Kraustscheid, 2017).

Though more realistic settings may assist learners in moving from comprehension to application of ethical principles and reasoning (Rutherford-Hemming, 2012), it is unclear whether simulation has a positive influence on the acquisition of ethical reasoning skills. Although Wilt (2012) has advanced five goals for simulation-based ethics education, to our

knowledge, these have not been widely adopted. To enhance our understanding of the utility and outcomes of HFHS as a teaching strategy for nursing ethics education, a scoping review was conducted. This review focused specifically on papers that included ethics education in HFHS for undergraduate nursing education.

Background

Examples of ethical dilemmas in everyday practice include truth-telling, assuring informed consent, protecting patient welfare, and engaging families in decision-making (Hoskins et. al, 2018). Consequently, nurses are expected to display high levels of morality and respect the values and rights of patients in need of their professional care (Ahn & Yeom, 2014; Gastmans, 2002).

Ethics in Nursing Education: Nurse educators have long recognized the importance of cultivating an ethical disposition in nursing students (Weaver, Morse, & Mitcham, 2008). Moral sensitivity—the ability to recognize a moral conflict and the situations that render people vulnerable, and the insight to consider the ethical consequences of one's decisions—is a necessary prerequisite to address the ethical dilemmas present in complex healthcare contexts (Kim, Park, Son, & Han, 2004). Case studies and discussion are commonly used approaches to teaching ethics in undergraduate nursing programs (Thiel et. al., 2013). It has been suggested however, that teaching ethics in more realistic settings, outside the classroom, may assist learners to move from comprehension to application (Bruce, Levett-Jones & Courtney-Pratt, 2019).

Simulation and Nursing Education*:* There is no single objective measure of learning (Cant & Cooper, 2017), and simulation studies have often evaluated student learning using differing measures. Capturing a range of measures of clinical competence, these criteria frequently include knowledge improvement, skill development, confidence levels, critical thinking, and

psychomotor skill acquisition (Cant, McKenna, & Cooper, 2013). In a systematic review, Lapkin et al. (2010) reported that the effectiveness of using human patient simulation manikins to teach clinical reasoning skills to undergraduate nursing students was unclear. In another systematic review, Yuan, et al. (2012) reported that HFHS enhanced the development of knowledge and skill scores in nursing and medical students. Similarly, in a meta-analysis of eight studies, Cant and Cooper (2017) noted that simulation learning significantly improved the clinical knowledge and confidence of nursing students, and learners' satisfaction. A limitation of these studies is that key terms such as 'clinical reasoning', 'knowledge' or 'clinical knowledge' are frequently undefined. Whether HFHS supports the development of ethical reasoning, or positively impacts the acquisition of ethical knowledge and reasoning skills remains unknown thus a scoping review is not only timely but necessary.

Aim of the Study

Using Arksey and O'Malley's six stage framework for conducting scoping reviews (2005), the primary aim of this scoping review was to systematically assemble, examine and map the extant literature pertaining to the integration of ethics education in simulation-based learning experiences in nursing undergraduate programs. The specific questions that guided this review were as follows.

1. How is ethics incorporated into simulation-based learning experiences with undergraduate nursing students?
2. What types of outcomes are reported when ethics is integrated into simulation-based learning with undergraduate nursing students?

Research Method

A scoping review is useful when the nature and extent of literature on a topic has not been extensively explored or a topic has been inconsistently represented in the literature (Arksey & O'Malley, 2005) as is the case with the use of HFHS in ethics education. A scoping review is more iterative and accommodating than a systematic review as a wider variety of peer-reviewed and grey literature sources may be considered. Given the extensive proliferation of research exploring simulation and nursing education, a scoping review was conducted to map the incorporation of ethics education in high-fidelity human simulation-based learning experiences with undergraduate nursing students as well as to identify the outcomes of integrating ethics education in simulation-based learning.

Inclusion criteria: The following criteria were applied: articles a) were peer-reviewed such as research reports, literature reviews, guidelines and standards, concept analysis, theoretical papers, policy documents, and experiential or case reports; b) defined or described HFHS simulation involving life-size mannequins with physiological and pharmacological responses, and sophisticated interactive capability in realistic scenarios (Yuan, Williams, & Fang, 2011); c) examined or described the integration of ethical principles, ethical dilemmas, and/or ethical reasoning during simulation-based learning; and d) pertained to undergraduate nursing student education or programs.

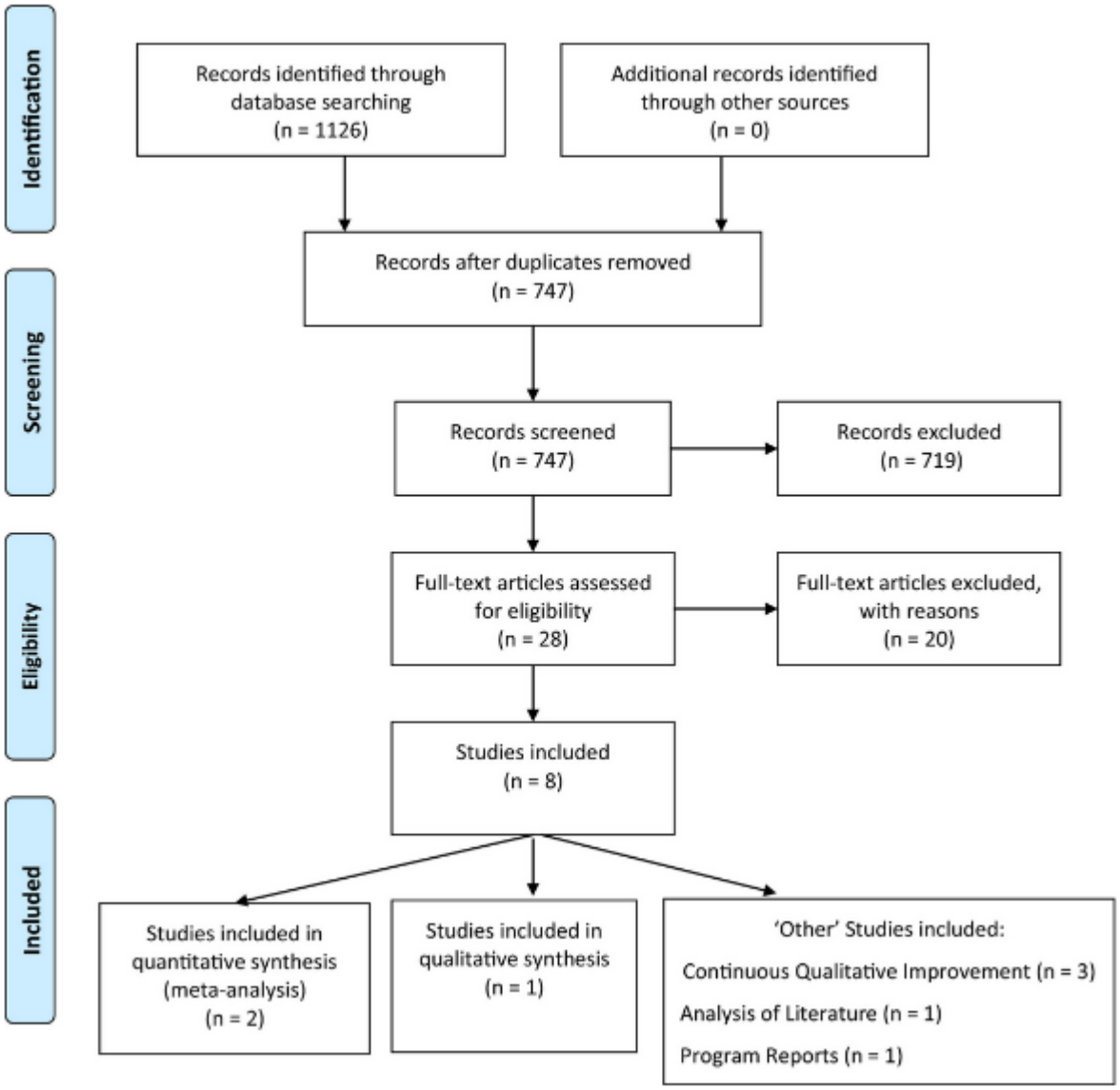
We limited our search to English language papers published between 2011 and 2020. According to Cant and Cooper (2017), prior to 2011, only about 40 nursing simulation studies were published annually. These parameters allowed us to identify relevant works and minimized the risk that relevant studies were discarded (Higgins & Deeks, 2008; Levac, Colquhoun, & O'Brien, 2010). The final search was conducted in January 2020.

Search Strategy*:* In consultation with a professional academic librarian, a five-step search strategy process was used: 1) an initial limited search of CINAHL and ProQuest Allied Nursing was followed by an analysis of the text words contained in the title and abstract, and the index terms used; 2) a second search was completed using all identified keywords and index terms across all included databases; 3) targeted searches of the website of nursing organizations involved in simulation education were completed (for example Simulation Innovation Resource Center, National League for Nursing and The International Nursing Association for Clinical Simulation); 4) grey literature was searched including dissertations and theses; and 5) a hand search was completed of the reference lists of all identified papers and reports for additional studies.

The databases searched included CINAHL, ProQuest Nursing & Allied Health Source, ProQuest Dissertations & Theses A&I, MEDLINE, Web of Science, ERIC, Scopus, PsycINFO, and the Joanna Briggs Institute EBP database. The preliminary search string included: MH "Nurses+', nurs*, or/1-2, MH "Education+" MH "Teaching+" MH "Learning+" MH "Students+" educat* or teach* or learn* or instruct* or train* or/4-8, 3 and 9, MH "Education, Nursing+" MH "Nurses+/ED' MH "Students, Nursing +" or/10-13.

The PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extensions for Scoping Reviews) was used (Figure 1) as was the PRISMA 2009 checklist (Supplementary File -1) to document relevant terminology, core concepts and key reporting items to support transparency (Moher, Liberati, Tetzlaff, & Altman, 2009; Tricco et al., 2018).

Figure 1. Flow chart of search strategy



Using an iterative process to minimize bias, two researchers independently reviewed the titles and abstracts yielded as well as the full papers. The third researcher reviewed items when agreement could not be reached. Articles were removed if the focus was on graduate nursing education, simulation other than high-fidelity human simulation was discussed, or if simulation was used as a teaching strategy with registered nurses or other healthcare professionals. Last, instances where ethics education was not discussed were removed.

Results Description of Studies: An overview of study characteristics is presented in Table 1. The eight papers that were extracted for this review were published between 2012-2019, with three research papers, one analysis of the literature (dissertation), three evaluation studies, and one report.

Table 1. Summary of articles

Author(s), year, country	Study aim(s)/ purpose	Study population and sample size	Design and methods	Ethics education	Study outcomes	Key findings
Agea et al., 2018, Spain	Identified nursing students' perceptions of the process of learning about bioethical issues using a high-fidelity mannequin or actor. Described underlying frames (perspectives) that inform students decision-making and actions.	30 fourth year undergraduate nursing students.	Qualitative methods with students participating in six simulated scenarios and structured debriefings. Each scenario and debriefing were video-recorded and transcribed verbatim. Data were analysed using directed content analysis and advocacy–inquiry.	Ethical principle of autonomy Ethics of termination of life saving measures (CPR) and end-of-life care	Students acknowledged the importance of learning about ethical issues through simulations. Students reported feelings of well-being, safety and comfort because they believed they were more competent dealing with bioethical issues. Students expressed a high desire to repeat the experience and strongly recommended practice scenarios with ethical content be part of the curriculum.	Simulation of ethical dilemmas promotes holistic patient care. Simulated learning illuminates real-life ethical dilemmas. Simulation and subsequent reflection are suitable tools to provoke behaviour changes in students.
Greco et al., 2019, USA	Investigated the effect of high-fidelity multiple-casualty	90 nursing students in	A one group pre-experimental pre-test,	Students were asked to use the Eight Key Questions	Students experienced significant growth in their ethical	Ethical reasoning is integral to nursing practice in

	disaster simulation and structured debriefing session on perceived ethical reasoning confidence in senior undergraduate nursing students. Explored the effect of the intervention on students' perceived importance of ethical reasoning and perceptions.	their third semester.	post-test design. Survey of Ethical Reasoning (SER) comprised of Likert-type questions representing four subscales.	Ethical Framework. This framework is intended to enhance understanding of what constitutes an ethical dilemma.	reasoning confidence scores ($t(89) = -6.609$, $p < .001$).	mass casualty situations. Students completing simulation value ethical reasoning. Ethically charged disaster simulations and guided debriefing can potentially develop and advance students' ethical reasoning processes.
Hartman & Salladay, 2014, USA	Presents a scenario with ethical dilemmas using high-fidelity simulation	No participants	No description provided	Students explored ethical dilemmas and identified alternative options and choices to reach resolution of the ethical dilemma.	No outcomes discussed	High-fidelity simulation offers students the opportunity to explore their values, ethical dilemmas and risk-taking.
Krautscheid, 2017, USA	Presents an educational innovation wherein students encountered microethical dilemmas embedded in high-fidelity simulation scenarios and demonstrated effective patient advocacy.	89 senior-level undergraduate nursing students	Students participated in a four-hour simulation using an unfolding scenario and structured debriefing sessions. Students provided written reflections	Students identified unsafe and unethical activities; advocated for ethical, evidence-based patient care; demonstrated ethically informed and evidence-based patient-centred care; and discussed professional	Students report the educational strategy increased their ethical decision-making confidence, empowered them to advocate on their patient's behalf, and built their courage to defend ethical practice.	Simulation extends ethics education by supporting the integration of affective and psychomotor learning and promotes congruence between knowing

			about their experience	ethical standards		what to do and actions.
Krautscheid et al., 2017, USA	Described the frequency of conflict-handling styles undergraduate nursing students demonstrated when encountering microethical dilemmas embedded within high-fidelity simulation scenarios.	59 senior-level undergraduate nursing students completing a medical-surgical course	Descriptive, cross-sectional, post hoc. Established high-fidelity scenarios routinely videotaped were analysed by three researchers.	Did not provide specific ethical content	55.9% of students demonstrated effective conflict-handling styles (collaborating or compromising). 44% of students demonstrated ineffective conflict-handling styles (competing, accommodating, avoiding)	To assist students in the development of their ability to identify and respond to ethical issues, nurse educators need to promote ethics of care and awareness of microethical dilemma using intentional strategies like high-fidelity simulation.
Smith et al., 2013, USA	In year 1, determined if there was a difference in student knowledge and attitudes about legal and ethical content at mid-semester versus end of semester. In year 2, determined if there was difference in student knowledge and attitudes about legal and ethical issues when students played the nurse's role versus a	Year 1: 67 undergraduate nursing students, randomly divided into two groups with one group completing the scenario at mid-semester and the other group at the end of the semester Year 2: 72 junior-level nursing students randomly assigned to roles (nurses and family members)	Used the continuous quality improvement (CQI) process over a three-year period. In each year, the plan, do, act and check model provided the framework for ongoing evaluation of the high-fidelity simulation experience. Year 1: Completed a pre-test and post-test (each comprised of 10 multiple	Did not provide specific ethical content	Year 1: No quantitative data available on students' pre/post-tests Independent *t* test (p = .05) on three Likert-type questions pertaining to peer evaluations revealed scores significantly higher at end of semester than mid-semester for all three questions. Self-evaluation scores revealed statistically significant difference between mid (M (SD); 3.58 (1.02)) and end	

	family member role. In year 3, determined if the effectiveness of the learning experience was affected by student participation in versus observation of, high-fidelity simulation scenarios.	Year 3: 85 junior nursing students randomly assigned to groups of 12	choice questions), self-evaluation and peer performance evaluation Year 2: Completed a pre-test and post-test (same questions as in Year 1), self-evaluation and peer performance evaluation Year 3: Completed a pre-test and post-test (same questions as in Year 1 with the addition of one question), self-evaluation and peer performance evaluation		of semester (*M* (SD); 4.10(1.04)) on achievement of scenario objectives. Open-ended questions pertaining to the experience did not produce different content or themes between data collection points. Year 2: Independent *t* test to determine if the mean difference between pre- and post-test scores between groups (students who played the nurse role and those who played the family role) showed that students who played the family role had a mean pre and post-test slightly but not significantly higher score (1.02) than students who played the nurse role (0.78). No statistically significant difference on peer evaluations between students who played the family member or nurse roles. No significant difference between	

					students on self-evaluations regarding accomplishing scenario goals. Year 3: Independent *t* tests revealed no statistically significant differences between student who participated in the high-fidelity scenario and those who observed regarding their self-evaluation, peer evaluation and pre/post-test scores. Qualitative data analysis suggests that participating and observing in a simulated learning experience was beneficial.	
Smith et al., 2012, USA	Determined the effectiveness of a high-fidelity human simulation (HFHS) in contrast to in-person and online format case studies.	60 third year undergraduate nursing students randomly assigned to either the online case study discussion, in-person case study, or HFHS group.	Students completed a survey comprised of three open-ended questions and one Likert-type question rating their overall learning experience.	Students reflected on decisions made, what they would do differently the next time they encountered a similar situation and how they could make better decisions. Students also considered cultural aspects.	Responses to all three questions were similar across groups. Kruskal–Wallis test revealed statistically significant difference in overall scores across the three groups with the HFHS students rating the case study/scenario experience higher (mean of 4.5/5) than the in-person (mean of 4.2/5) and online groups	HFHS scenarios help students recognise the application of the legal and ethical course content in their clinical pra

					(mean of 3.6/5) (test statistic = 9.172 , df = 2, $p < .05$).	
Wilt, 2012, USA	Review traditional and non-traditional that is, simulation-based learning methods of ethics education to meet the goals of ethics education.	Limits its focus to ethics education of medical and baccalaureate nursing students.	An analysis of the literature	Did not provide specific ethics content	Outcomes were not provided	Simulation-based learning methods are the preferable method for teaching healthcare ethics to medical and baccalaureate nursing students when compared to traditional methods alone.

Seven papers were from the United States and one was from Spain. Two were quantitative studies; one study used a pretest, posttest design (Greco, Lewis, Sanford, Sawin, & Ames, 2019), and one used a descriptive cross-sectional design with a post hoc analysis (Krautscheid, Luebbering, & Krautscheid, 2017). One was a qualitative study with an unspecified design (Agea et al., 2018). Three evaluation studies examined quality improvement and learner outcomes through mixed measurement: one used a continuous quality improvement process (Smith, Klaassen, Zimmerman, & Cheng, 2013), and two discussed an educational innovation program and its evaluation (Krautscheid, 2017; Smith, Witt, Klaassen, Zimmerman, & Cheng, 2012). Additionally, one paper presented an educational innovation (Hartman & Salladay, 2014). The final paper was a dissertation which provided a philosophical analysis of scholarly literature (Wilt, 2012). Ethics education was applied in HFHS with undergraduate

nursing students in all included articles. In total, approximately 549 nursing students participated in these studies, quality improvement project and educational initiatives.

Included articles addressed three broad categories: the *'what'* in ethics education found in the category of ethical competence; the *'how'* of ethics education found in the category of HFHS as a teaching approach and; the *'when'* of ethics education found in the category of timing of simulated ethics education.

Ethical Competence: Three articles presented components of *ethical competence* (Agea et al., 2018; Krautscheid, Luebbering, & Krautscheid, 2017; Greco et al., 2019). Ethical competence is described as the ability to engage in self-reflection and implement behavior changes based on this reflection and has been applied in simulation to support conflict management, ethical decision making, and ethical reasoning.

***Conflict management*:** Students exhibited six types of conflict-handling styles with compromising being used most frequently (35.5%), followed by collaborating (20%), avoiding (16.9%), dilemma not noticed (15%), accommodating (10%) and competing (1.6%) (Krautscheid, Luebbering, & Krautscheid, 2017). Students demonstrated a compromising conflict-handling style when they identified a behavior that had the potential to create a microethical dilemma (for example, questionable practices) and responded using moderately assertive communication to correct the behavior. Students engaged in collaborative conflict-handling styles when they suggested modifications to practice while providing rationale for that change. Using an avoidance conflict-handling style resulted in students either not addressing their concerns or those of other persons. Students who did not notice a dilemma also demonstrated questionable unsafe nursing practice while students who used a competing

conflict-handling style, pursued their own concerns at the expense of another person. Using this style, students demonstrated assertiveness, lack of cooperation, and were power-oriented.

***Ethical decision making*:** A total of 15 mental models were identified that underlie the ethical decision making of students (Agea et al., 2018). Examples of some of the mental models students used included respecting patient autonomy except in limited circumstances that were clear, breaching confidentiality when there was a risk to the patient's life, and placing patient needs in front of family needs in palliative care situations. In this study, students believed that working through an ethical dilemma using simulation promoted holistic care for patients, although at times the authors noted that there was some disconnect between ethical knowledge (knowing the right thing to do) and clinical practice (doing the right thing) especially with regards to the ethical principle of patient autonomy.

***Ethical reasoning*:** Ethical reasoning was not defined, but five conditions for responding ethically to a situation were described by Greco et al. (2019). Using the Survey of Ethical Reasoning (SER), Greco et al., (2019) found students ranked ethical reasoning as more important after participating in simulation than prior to participation. Student confidence improved significantly ($p < 0.001$) following HFHS when students had the opportunity to apply, discuss and engage in ethical reasoning.

High-fidelity human simulation as a teaching and learning approach: The use of HFHS as a teaching and learning approach had various purposes: 1) to expose students to a disorienting dilemma with underlying ethical and legal issues, followed by a debriefing session involving reflection on experiences and discussion of rationale for actions taken (Smith et al., 2012); 2); to expose students to common microethical dilemmas (everyday, routine individual-level decisions that have the potential to cause harm) where they demonstrate effective patient advocacy

(Krautscheid, 2017) and; 3) to expose students to end-of-life HFHS experiences including ethical dilemmas and choices made regarding hospice care (Hartman & Salladay, 2014). Last, Wilt (2012) in an analysis of the scholarly literature, argued that simulation, when used in combination with traditional teaching methodologies, best meets the goals of ethics education. Simulation helps students to become ethically sensitive, reflective, and ethically competent healthcare practitioners who have the capacity to positively influence the quality of patient care (Wilt, 2012).

HFHS with embedded microethical dilemmas: Microethical dilemmas like infection control breaches, violating patient confidentiality, and unsafe medication administration were embedded in existing HFHS (Krautscheid, 2017). Student reflections on the microethical component of the HFHS using five learning outcomes based on Bloom's taxonomy, revealed that students gained confidence in their ability to effectively communicate their concerns, overcame their fear of speaking up and felt empowered to advocate. Students also recommended embedding microethical dilemmas in junior-level HFHS, and prior to the final year of the program, providing opportunities to rehearse and receive feedback on ethical actions and communication strategies.

***HFHS and simulated clinical experience to explore values and ethical choices*:** In this initiative (Hartman & Salladay, 2014), participants worked through a progressive end-of-life scenario during which an ethical dilemma might increase in complexity. During the debriefing, the facilitator led the participants in an exploration their feelings, thoughts, values, and choices made regarding care provided to the hospice patient.

Theoretical and philosophical rationale for simulated learning: Wilt (2012) presented a philosophical argument for adding simulation to traditional teaching methodologies for ethics

education. Simulation in this analysis was defined as experiential learning across the continuum that included role play, standardized patients, and HFHS. Simulation-based learning could help nursing students develop professional competencies like problem solving in ill-defined and ambiguous situations (Wilt, 2012). Simulation-based learning would provide students with the opportunity to practice, receive feedback, reflect and develop "ethical analysis" and "decision making" skills (Wilt, 2012, p. v). The analysis concluded that simulation is a relevant, effective, and pedagogically sound teaching strategy that offers a holistic educational approach to reach the goals of ethics education (Wilt, 2012).

Timing of simulated ethics education: To evaluate the effectiveness of a HFHS scenario that required understanding of legal and ethical concepts, the plan, do, check and act process of continuous quality improvement was used over a three-year period (Smith et al., 2013). Evaluation data indicated that HFHS was most effective at the end of semester to review and apply previous content; and neither observation nor participation in debriefing made a significant difference in students pre and posttest scores, student evaluations, or student perceptions of the HFHS experience. Caution must be used when considering these findings since only one paper addressed the timing of simulated ethics education.

Discussion

The primary aim of this scoping review was to identify, synthesize and map the literature pertaining to the integration of ethics education in high-fidelity human simulation-based learning experiences in nursing undergraduate programs. Several articles reported that HFHS was associated with enhanced student learning of ethics content and skills, confidence, and satisfaction. Indeed, the qualitative and quantitative studies in this review reported a variety of positive outcomes for undergraduate nursing student perceptions regarding the integration of

ethics education into simulation-based learnings. However, since only eight articles met the inclusion criteria for this study with only three of those papers presenting findings from research studies, and only one paper considered when ethics in HFHS might be included in undergraduate nursing education, the inclusion of ethics education scenarios in HFHS appears to be a relative new teaching innovation in undergraduate nursing education.

Moreover, at the time of this review, no studies were located that measured actual skills and knowledge (i.e., transfer of ethical concepts, skills, and ethical decision-making abilities into the practice setting) and the influence of simulation on the development and use of ethical values is unknown (Pinar & Peksoy, 2016). So while16 years ago, Milton (2004) called nurse educators to develop a more robust ethics curriculum whereby undergraduate nursing students would be taught how to identify, discuss, and articulate discipline-specific nursing ethical assumptions, principles and concepts, there continues to be no consensus on the ‘what’, ‘how’ or ‘when’ of ethics education. This is also evident in HFHS since there is little agreement as to what constitutes best practice in ethics education for undergraduate nursing programs (Laabs, 2015). We conclude that more research is needed to determine the effect HFHS might have on the transfer of learning ethical practice competencies.

Limitations

Although from our perspective, the authors of the studies included in this review used appropriate data collection and analysis methods, the intent of this scoping was not to appraise the degree of dependability of the findings reported by the authors. Indeed, scoping reviews do not appraise the quality of the evidence presented in the studies included in the review (Arksey & O’Malley, 2005). Consequently, there is potential for bias limiting the accuracy of the

conclusions derived from the review (Grant & Booth, 2009). Including only English articles in the review also has the potential to bias the reviewer's conclusions.

Implications for Practice

Ethical dilemmas are evident in everyday nursing practice (Worthley, 1997, cited in Krautscheid et cal, 2017). Consequently, foundational ethics knowledge requires more than familiarity with rules and common vocabulary: the skill to make reasoned arguments is also essential (Laabs, 2015). We suggest quality improvement processes and research studies are needed to determine the types of ethical dilemmas and debriefing sessions and optimal timing of HFHS ethics simulations in undergraduate nursing education. Such work should also focus on the learning needs of nurse educators seeking to incorporate ethics within HFHS to support best practices in the development of ethical competence in undergraduate nursing students. Research is also needed to identify, develop, implement, and evaluate student supports needed to run ethics HFHS.

We also suggest that a re-personalization that is, an internalization of ethical dilemmas and what they mean to others and self during HFHS will support the development of moral identity, moral agency and moral capacity in everyday nursing practice (Hartick Doane, 2002). Last, we suggest that in order to develop best practice in ethics education in HFHS, the focus of ethics education should be on the development of ethical reasoning and decision-making. Thus, we encourage nurse educators develop objectives for all simulated learning activities that incorporate ethics education in simulation-based learning. The pedagogical reasoning and action model developed by Jensen and Greenfield (2012) would help enhance nurse educator confidence in teaching ethics in simulation-based activities. The model focuses on nurse

educator capacity to facilitate students' ability to develop metacognitive strategies for the resolution of ethical dilemmas.

Conclusion

Ethics education in HFHS is a developing topic although it has the potential to enhance ethics education and support undergraduate student nurses' application and transfer of learning to practice settings. Future teaching innovation, evaluation, and research is required to determine the 'what', 'how' and 'when' of undergraduate nursing ethics education.

Relevance to clinical practice

Over the last ten years, HFHS has become ubiquitous in clinical undergraduate education. While the value of ethics education for undergraduate nursing students is well established in the literature, HFHS appears to be a relative new teaching innovation in undergraduate nursing education. Perhaps not surprisingly there is no consensus on the *'what'* in ethics education, the *'how'* of ethics education and the *'when'* of ethics education. This suggests that there is little agreement as to what constitutes best practice in ethics education for undergraduate nursing programs. This is a significant gap that needs to be addressed.

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