Call to Action: Ethical Awareness in Healthcare Simulation

Lori Lioce DNP, FNP-BC, CHSE, FAANP[1*] and Leslie Graham RN MN CNCC CHSE[2]

[1]*Clinical Associate Professor of Nursing and Executive Director of the Learning and Technology Resource Center, USA*

[2]*Professor, Nursing,; Adjunct Professor UOIT- Durham College, Oshawa, Ontario, Canada*

[*]Corresponding author
Lori Lioce, The University of Alabama in Huntsville College of Nursing, Huntsville, AL 35899, USA, E-mail: lioceb@uah.edu.

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Abstract
The purpose of this paper is to raise awareness of the implications of intentional inclusion of ethics in simulation design [1]. This call-to-action provides a roadmap for nursing students and faculty engaging in simulation. While simulation-based learning experiences have been used in the education of health professions such as medicine, it is now recognized as an essential component of nursing education [2]. Simulation as pedagogy, is an effective strategy for teaching and learning in nursing education provided students and faculty exhibit professional integrity during the learning opportunity [3].

Implementation of Ethics in Simulation

Simulation based learning activities have become an essential component in education. As the learner develops clinical competency through mastery training, the use of simulation provides a safe and controlled environment in which to learn during and after the simulation-based learning experience (SBL), through structured reflection [4]. With the growing trend to increase the use of simulation activities, a deeper focus is required by the educator to deliberately integrate ethical principles into simulation design [5]. Educators and learners have a regulatory obligation to adhere to ethical principles in clinical practice and should mirror the same in simulation activities as well. This paper focuses on a renewed approach to the broad application of ethics within healthcare simulation.

Background

Historically, nursing has been shaped by societal needs in developing moral thinking and moral reasoning [6]. To assist nursing learners with development of moral reasoning and ethical comportment, simulation experiences are designed specifically to include ethical principles. The educator assumes the ultimate accountability in designing the simulation experiences where ethical principles are embedded throughout the simulation experience (International Nursing Association for Clinical Simulation and Learning (INACSL) 2016.

Definitions

Experiential learning using simulation may assume a variety of forms or typology. Types of experiential learning may include manikin-based, role play, virtual simulation, or standardized patients or written cases which represent a patient or client situation to enhance the learner's knowledge, skills and attitudes

[7]. Manikin-based simulation ranges from a low fidelity static manikin to a high fidelity computerized human patient simulator which can provide a high level of interactivity with the learner [7]. It is incumbent on the educator to determine the appropriate level of fidelity to meet the learning objectives, without adding unnecessary technology which may overwhelm the learner detracting from the learning objectives [8].

The American Nurses Association (ANA) Code of Ethics states "fundamentally, ethics is a theoretical and reflective domain of human knowledge that addresses issues and questions about morality in human choices, actions, character, and ends" [9]. For the purpose of this paper the authors focus on the ANA's definition of "applied ethics". Applied ethics wrestles with questions of right, wrong, good and evil in a specific realm of human action, such as nursing... However, the fundamental concern of a code of ethics for nursing is to provide normative applied moral guidance for nurses in terms of what they ought to do, be and seek [9].

The following ethical principles are discussed with simulation based examples:
Autonomy is defined as respect for right of the individual to make their own choices [10,11]. This is reflected in simulation experiences when participants are encouraged to explore and apply theoretical knowledge. The facilitator permits the participant to struggle during the scenario to allow recall of information, clinical reasoning and decision making and learning to occur.

Beneficence or to act for the benefit of others, applies to simulation experiences when the participant/learner is able to repeat their performance until mastery is achieved in a particular skill [10,11]. Constructive feedback is provided during the debriefing, where

participants can self-reflect in an effort to improve critical thinking impacting clinical practice.

Non-malfeasance is the principle that requires the health care provider 'to do no harm' [10,11]. Within simulation, the educators/facilitators create a safe and positive learning environment. Therefore, vigilance is required on behalf of the facilitator observing participants experiencing emotional distress as result of the scenario. For the participant experiencing emotional distress, temporarily removing for a short time to allow the participant to recover may be an option. If inconsolable distress is encountered the participant may need a referral for counseling. Unintentional harm to a patient may also occur as result of incorrect setup of a simulation experience. For example, unintentional training errors occur when attention to detail is overlooked. For example, a medication is typically identified as a purple pill, and the set up includes a more easily accessible white pill. The participant may not have the same level of situational awareness, will miss the visual color cue, typically signaling the nurse of a medication error. Thereby overriding a significant safety check. This could create serious harm to the patient.

Justice refers to the principle of fairness and equality [10,11]. Equality for all participants begins with standardized scripts to provide the identical experience for each participant. Each participant will have an equal opportunity for the full learning opportunity when the educator/ facilitator use an evidence-based approach to debriefing. Despite the role of the participant may have assumed during the simulation, all learners are invited to participate in the debriefing to maximize learning. Participants should no longer practice on patients now that simulators can replicate human physiology for educational purposes [2]. It is no longer acceptable to "learn one, do one, teach one" when simulation based activities are central to the healthcare quality and patient safety agenda.

To fully explore the principle of justice, feminist ethics describe the power imbalance that may be experienced in a simulation learning experience. Educators/facilitators must demonstrate awareness of hierarchical differences and take steps to mitigate for the psychological safety of the learner [12,13]. Closely aligned with feminist ethics, relational ethics focuses on the nature of the relationships within the simulation based learning experience [6].

The relationships between the educator and the learner, among the learners and among the educators/facilitators should always be viewed using an ethical lens. Vulnerable learners, inexperienced educators and poorly designed simulation experiences can contribute to poor outcomes using this technology for teaching and learning. The intent of this paper is to make visible the magnitude of which applied ethics is woven throughout the simulation process and highlight the opportunity to impact ethical awareness through healthcare simulation.

Literature Review
Teaching and learning using simulation as an educational technology requires professional integrity of the participant and the educator/facilitator engaging in the learning opportunity [3,14]. Lack of professionalism or ethical behavior may alter the intended learning and create undue anxiety among the participants [3]. Providing adequate information during the prebriefing may diminish anxiety associated with simulation experience [15]. Demonstrating ethical behavior during a simulation experience is necessary to create a positive and safe learning environment [3]. As educators are held to a higher standard, it is thought that learners acquire ethical behaviors through role modeling demonstrated by the educators conducting the simulation experience [14,16]. With such responsibility, the educator is required to maintain an ethical stance, focusing on the participant's learning and psychological safety as central components to the simulation. Participant also bear responsibility to ethical comportment during a simulated experience such as maintaining confidentiality of the simulated experience [3].

Simulation-based experiences may be used to teach the concept of ethics in nursing and other healthcare professions [17,18]. However, there is little literature exploring the conscious and deliberate inclusion of ethical principles within simulation-based experiences in nursing. Further, there is a paucity of literature identifying ethical attributes of the facilitator, participant and environment for conducting an effective simulation experience.

Discussion
Simulation as a pedagogy has emerged as an effective strategy for teaching and learning in nursing education. With the release of the National Simulation Study simulation educators are planning wider adoption of simulation based learning experiences both for classroom and clinical courses [1,5]. Transitioning to this expanded use of simulation, there is increased emphasis on a comprehensive and systematic approach to the integration of simulation ethics with the simulation design. The Simulation Ethics Model provides a visual display of the ethical principles, attributes, standards and concepts which should be integrated to produce ethical simulation experiences. These ingredients must be built into the design of simulated experiences (Figure 1).

Figure 1: Simulation Ethics Model.

Educator/Facilitator

In order to maintain ethical attributes such as trustworthiness, the educator is required to be transparent with their actions [19]. Providing comprehensive pre-briefing information, including the scenario and evaluation, supports learner success [20]. Learners need to feel safe in the environment, trusting facilitators to lead them through a simulated experience that will meet the learning objectives, leveled to their ability and year level, and incorporating the appropriate fidelity to enhance realism. With the facilitator creating a real life environment, the learner has the ability to 'suspend disbelief' and fully engage in the simulated experience. The facilitator needs to actively neutralize any power differential between the facilitator and the learner that can negatively influence the simulation. If the learner feels marginalized, it will be difficult to unfold a case scenario with full impact for learning [21].

To set clear expectations and focus on the learning experience, common terminology should be used [7]. This language should be consistent across preparation assignments, courses and programs. Thus providing a foundation for common simulation terminology in teaching, learning and research, improves communication among educators, learners and administrators [7,22].

Learner

Confidentiality is an expectation for participants and educators engaging in simulation [3]. Having participants sign confidentiality waivers that include a description of the consequences such as initiating an academic misconduct if a breech in confidentiality should occur. To fully engage in the learning opportunity, the participant must come prepared with foundational knowledge. The learner may be provided adequate information during the pre-briefing, yet may not engage in preparatory activities prior to the simulation experience [23]. Upholding the ethical principle of non-malfeasance, the participant can minimize risk to those associated with the experience through adequate preparation. Ethical behaviors are guided by the Codes of Ethics that provide a framework for nurses [9]. The same behavior expected in the clinical practicum is expected in the simulation experience so that ethical behavior is learned and modeled. If unethical behavior is discovered, participants and educators have an ethical obligation to address the behavior in a respectful manner. Constructive feedback to the participant utilizing clear communication aligns with the ethical principle of beneficence. Clearly articulating the participant's strengths and opportunities will encourage the self-regulated learner to create a plan for success. Developing a safe learning environment following evidence-based criteria empowers the learner to engage in a self-assessment, leading to self-regulated learning.

Simulation ethics necessitates clear and measurable learning objectives and supports the principle of justice [1,24]. Thorough objective-based planning shows respect for the staff, educator and learners time. Well written objectives provide structure, enable clear preparation, and attainable goals thus diminishing the risk (non-maleficence) for the participant by decreasing anxiety and variability in subjective assessment. Clearly written learning objectives allow standardization of scripts that provide an equitable opportunity for all participants, curtailing last minute revisions, and minimizing stress on the staff due to poor planning. Educators demonstrate ethical behaviors when course assessments are fair and align objective measures with course objectives [25].

Facilitators must ensure justice, non-maleficence, beneficence and autonomy are maintained throughout the simulation experience. A facilitator must know the environment, case/activity, script, objectives, and timing of the cues prior to learner arrival. Educators can improve the principles of justice and beneficence by checking the environment, after set-up, for objective cues, employ a quality improvement process through inclusion of scenario dry-run with the appropriate teams prior to each activity every semester, and through incorporation of evidence based practice and protocols.

Facilitator characteristics most closely align with the ethical principles of beneficence and non-maleficence. Modeling of professional behavior through professional communication, facilitating discovery learning and learner-centered debriefing foster beneficence. Through fostering learner autonomy in decision-making and allowing the learner to see the consequences of their actions is crucial in simulation experiences [19].

The National Council of State Boards of Nursing (NCSBN) Simulation Study and the Standards of Best Practice: Simulation both strongly support mandated facilitator and debriefing training prior to simulation education [5]. The ethical obligation is to maintain a trusting environment and provide quality, evidence-based learning opportunities. Facilitators can model mutual trust through respectful interactions, planning appropriate simulations, with measurable learning objectives, and provide orientation to the simulation environment. A facilitator's positive attitude towards SBL experience integrating simulation ethics creates a safe learning environment. Most significantly, facilitators are required to be sensitive to ethical and cultural issues, through observing learners reactions. The facilitator holds the ultimate accountability for modeling simulation ethics and successful simulation outcomes. Educators demonstrate ethical attributes as an educator when they have mastery of the content or are subject matter experts for the courses they teach [14]. It would be considered unethical to teach a class with little content expertise, or unprepared to facilitate a simulation activity. Facilitators should prepare and provide an environment that is open and welcoming to the learner to diminish any power differential and enhance learning opportunities. Facilitators also need to be aware of the psychological risks in the simulation lab. When there is a high degree of fidelity the learners can be overwhelmed with emotion throughout the case scenario and this can create a negative effect on learning [1,13].

Simulation Design

Debriefing is considered a significant part of simulation experiences [26,27]. Through structured debriefing the facilitator guides the participant through a reflective process to greater understanding. The participant can reflect on their own performance, identifying strategies to improve should a similar situation present in

the practice environment. In meeting the ethical principle of beneficence, the educator requires formal education in debriefing methodology [5]. The facilitator is required to have knowledge of multiple techniques of debriefing to enhance on the learning. The simulation and debriefing is guided by the learning objectives all of which enhances the transfer of learning [27]. In setting the stage for the debriefing, the facilitator promotes an environment of trust and mutual respect. The participants are assured of confidentiality, as the learner may feel exposed during the debriefing. The ethical principle of justice is maintained when the facilitator who observed the simulation conducts the debriefing.

Participant assessment and evaluation in simulation-based experiences, may take the form of formative assessment or summative evaluation [28]. Formative assessment provides ongoing feedback that assists the participant to improve performance and behaviors throughout the learning experience. While summative evaluation is usually given at the end of the learning experience to evaluate achievement of the learning objectives [28]. To maintain the ethical principle of justice, the participants should be informed of the learning outcomes, as well as the evaluation criteria as applicable, in advance of the simulation activity. To improve rigor of the evaluation, the evaluator should receive training and be observed to ensure inter-rater reliability to maintain consistency from one assessor to the next.

Examples of applied simulation ethics: Attributes of applied simulation ethics are shown in Figure 2, the many influences to fully integrate simulation ethics into simulation based learning activities. Three important documents essential to inform structure, evidence-based practice and provide vision for the future include INACSL's Standards of Best Practice: Simulation^SM, Society for Simulation in Healthcare (SSH, 2016) Accreditation standards and the National League for Nursing's (NLN) vision series [29-31].
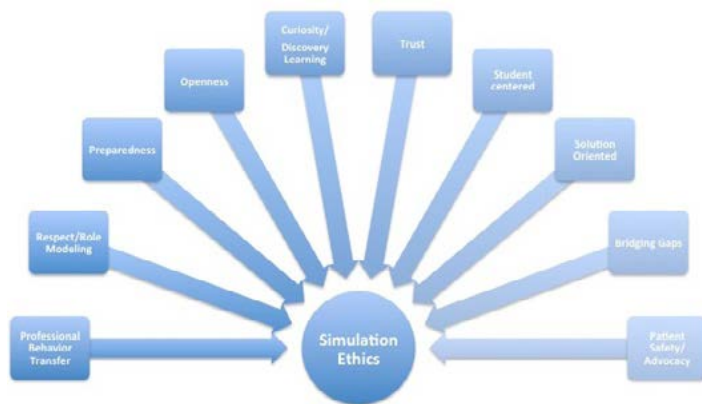

Figure 2: Attributes of Simulation Ethics.

Conclusion

In conclusion, as simulation plays a greater role in nursing education, both preservice and inservice simulation ethics become central to all activities. "The greatest enemy of knowledge is not ignorance; it is the illusion of knowledge" [32]. Facilitators cannot continue to operate under the illusion that traditional teaching

will effect this generation of learners and must incorporate ethical principles to inspire change. Educators must step forward and consciously and deliberately integrate simulation ethics in all facilitators/learner training, preparation, and in the design of active learning strategies. Facilitators must be willing to invest the necessary time to change curricula and personal teaching patterns to prepare a competent and ethical practitioner. Simulation ethics should guide simulation design in the same manner as science guides the development of clinical practice guidelines.

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