One Minute Simulation: An Evolving Case Study in the Classroom

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One Minute Simulation is a fast and easy method that can be used in any nursing education or delivery setting to train nursing students or staff. The method requires little advanced preparation, no special equipment, and it can be performed in traditional classrooms, labs or empty patient rooms. Scenarios require little beyond basic demographic information and a chief complaint. The students explore the scenario in an evolving case study. The instructor can adjust the scenario to fit the goals and objectives set for the simulation experience. Because students cannot predict how the case will progress, One Minute Simulation encourages student engagement and proactive thinking towards patient care. Simulations can easily be adjusted for the experience and educational levels of the student. A simple physical assessment scenario is ideal for first semester nursing students, while more complex scenarios, such as a complex myocardial infarction, could be created for advanced students or experienced nurses.

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One of the challenges in nursing education today is the teaching of clinical reasoning. Clinical reasoning is often confused with critical thinking, but there are key differences between the two. Critical thinking is the ability to take new information and adapt to changing circumstances. In patient care, this results in a reactive approach that can have negative impacts on outcomes. Clinical reasoning is the ability to anticipate poor outcomes based on patient complaints, symptoms, medical history, and diagnoses, and to implement a plan of care tailored to prevent and avoid outcomes from predictable complications (Benner, Hughes, and Sutphen, 2008). Additionally, content saturation presents a challenge for programs training students for the NCLEX-RN national licensing exam in two years. Therefore nursing programs nationwide are adopting new strategies, including active learning strategies, to teach broad concepts. Nursing is moving away from having students memorize a predetermined list of diseases and common nursing interventions, towards a concept based educational model that allows students to adapt foundational knowledge to diverse patient care situations (Giddens, 2007; Institute of Medicine, 2010, p. 191). Students need to demonstrate proficiency in managing complex patient conditions. Active learning strategies are preferred over lecture-based methodologies.

Another challenge in nursing education is the thinking process of most new students. According to Benner's *Novice to Expert* theory, nurses progress through several stages in their clinical education before becoming expert nurses (1984). Each stage of their training corresponds with a different manner of thinking that impacts the care they plan for the patient. Novice nurses (i.e. nursing students) tend to have rigid thinking. They hold a black and white view of patient care reflective of the rote memorization that is often counterproductive in the

hospital setting because it is a reactive and narrow approach that does not account for unexpected developments or individual variation in the needs of one patient to another. Even graduate nurses just beginning their careers can suffer from this kind of thinking. The result is missed cues that would alert the expert nurse to impending problems that can easily be avoided through simple, yet proactive practices. For example, the expert nurse would look at a set of vital signs on a post surgical patient, take into account their history and progress, and see an early sepsis or shock when the novice nurse sees a stable patient. The expert nurse implements interventions to stabilize the patient before anything bad happens. Meanwhile the novice nurse is surprised by the "sudden" decline in condition, and struggles to keep the patient alive.

In nursing education, simulation is an accepted strategy for actively teaching clinical reasoning to students. The National Council of State Boards of Nursing, the organization that writes the NCLEX-RN, has accepted simulation to substitute for up to 50% of all clinical hours (Hayden, Smiley, Alexander, Kardon-Edgren, and Jeffries, 2015). Bringing simulation into a classroom setting offers an opportunity to use a proven educational tool as an active learning means of teaching clinical reasoning.

Traditional methods of simulation include expensive labs, high fidelity manikins and realistic hospital settings to run complex scenarios. Often, these sessions are videotaped. Bringing this equipment into a classroom, particularly a large lecture class, is impractical. However, simulation does not have to involve any of these expensive or complex tools. In fact, it can be performed in a traditional classroom setting using a minimum of equipment; a low fidelity or traditional manikin on a stretcher could be used, and no special equipment is required.

Another issue that arises with simulation is participation by all students in the simulation group. Most simulation occurs in small groups, and there are often students who "sit on the

sidelines" rather than engage in the scenario. To encourage active participation by the entire class, having one student at a time provide the active patient care solo for a very short time overcomes that issue, and allows time for the entire class to participate. This is the basic premise behind One Minute Simulation: one student at a time provides care to the simulated patient for one minute before handing off the care to the next student.

Methods and Materials

Essential equipment the instructor will need includes: a whiteboard, Smart Board, or chalkboard, a stopwatch or timer, and a way to generate random numbers. Access to a low fidelity manikin and other equipment is helpful as a focus, but not essential. Students may prefer to have a visual focus while they think about their care plan. A high fidelity manikin can be used, but a low fidelity manikin will work just as well and is often easier to move from a lab to the classroom. Low fidelity simulation is realistic enough in uncomplicated patient care scenarios, and easier to implement quickly in classroom settings than high fidelity (Sharpnack and Madigan, 2012; Guhde, 2011).

If used, the manikin should be placed at the center of the classroom where it can easily be observed by the entire class. Additional equipment can be placed near the manikin, as props to suggest a sense of realism and hint at possible nursing actions, but these are not required as the student will not actually perform tactile skills are part of One Minute Simulation. The goal is to stimulate clinical reasoning, not evaluate skills performance, and skills performance is overly time consuming.

Students should be assigned numbers, which will be randomly drawn by the instructor during the simulation. On the board, the instructor should write the age, gender, and chief

complaint. The instructor will pull a random number, and the student will come to the front of the class. When the student is ready, the instructor will start the stopwatch to time the student. The student will deliver one minute of patient care to the manikin through role-play, while the instructor writes the student's actions on the white board as "documentation." Alternatively, the instructor can have another student perform this task. At the end of one minute, the instructor will call "time," draw another number and the next student will come forward to deliver one minute of patient care picking up where the previous student left off.

The actions of the students create an evolving case study. The scenario should be designed to implement nursing care of patients whose conditions the students have already studied. This allows the student to make independent decisions in a safe environment (e.g. no actual patients are at risk). The direction the case study will go will depend on the choices of the students in regards to how they identify and implement priority care decisions. As the scenario moves forward, the students should at intervals ask assessment questions to evaluate the effectiveness of their interventions, and identify new or unexpected problems as part of the nursing process. These questions provide the instructor with opportunities to push the case in a new direction. If the students are performing correct interventions the patient's condition should improve, even if incrementally, or stay the same. If the students are performing incorrect interventions, the patient's condition should change in some way for the worse. The instructor can also consider interjecting a key finding to cue the students as to what the next step should be. However, the instructor should not correct inappropriate interventions. Rather, such instances should be used as teachable moments during the debriefing.

The simulation will end when all of the students in the class have delivered one minute of patient care, or after an amount of time pre-determined by the instructor. In large lecture classes,

the instructor may not have time for every student to deliver patient care, and still have time to address other teaching or classroom plans for the day. The instructor should be free to manage class time effectively, and provide opportunities for other forms of learning such as answering student questions or reinforcing core ideas in lecture. As a rule, the simulation portion of One Minute Simulation should last no more than one hour. A debriefing will then follow the simulation.

Prebriefing and Debriefing

Prebriefing and Debriefing are essential components of One Minute Simulation. Prebriefing lays the essential foundation for student practice during the simulation (Page-Cutrara, 2014). Prebriefing can be achieved through a discussion of the concept to be simulated, or a short lecture just before the simulation itself. For example, the instructor can give a lecture or lead a discussion of the essentials of care for a patient displaying symptoms of myocardial infarction (MI), then run the students through a One Minute Simulation scenario to allow them to apply the learning in applied practice. Students should not be thrown "cold" into a scenario to care for patients they have not learned to work with. One Minute Simulation is an opportunity to practice nursing care they have already learned about through some other means.

Debriefing should begin when the simulation ends. The instructor should look over the care documented on the board, and reinforce aspects of nursing care that was done well, while discussing areas where students had difficulty setting appropriate priorities, demonstrated poor foundational knowledge, made medication errors, or other learning opportunities. Areas of safe nursing practice such as ethics, informed consent, safe medication administration, and family processes should also be discussed.

Tips for Success

Running One Minute Simulation will require the preparation of a scenario. Don't spend too much time creating something too detailed. Make a rough outline of how the patient care scenario would generally go in actual practice. Be flexible during the simulation itself; students may take the case in unexpected or bizarre directions. Allow for this, and treat the issue as an opportunity for learning in debriefing. Scenarios should be tailored for the learning level of the student. An acute MI scenario should be simple for the pre-licensure student, and more complex for experienced emergency nurses.

During the simulation itself, the students will operate on certain assumptions, which must be explained to them before the simulation begins. The first assumption is that the student has access to all the orders required to perform the patient care the student believes should be delivered at that moment during the simulation. The student should not be allowed to lean on the "crutch" of calling the physician to solve the problem. Students must be required to do their own thinking, and make their own nursing plan. If the student makes an error, the instructor should not call attention to it or hint at a correction, but leave the subject for debriefing or a subsequent student to correct.

Students should be allowed to "phone a friend" by asking for a consult if they get stumped. Some students will freeze when they get in front of the class. The instructor should encourage the student to accomplish at least one task during their one minute. However, the class should not be allowed to shout out tips or instructions to the student during the simulation as that is distracting, or that prevents the student from doing their own thinking.

Avoid having students actually perform procedures. One Minute Simulation does not allow sufficient time for this, and the objective is to focus on clinical reasoning and proactive

care, not tactile skills performance. If a student wants to insert a Foley catheter, inform the student the catheter is in and move on.

Document the care provided in a linear manner, numbered by student, to promote clarity of what care was given at what point in the scenario. Don't expect the students to prioritize in a pre-determined checklist of actions; often if a student misses a priority, the following student will address it. Rather, focus on the overall evolution of the scenario; were all the priorities addressed? Did the students understand the pharmacology of their interventions? Did they re-assess after performing an intervention, and adjust the plan of care based on new data?

Sample One-Minute Simulation in Practice

One Minute Simulation was employed at UC Blue Ash College during the Fall 2015 semester in NSTN 2005C Nursing IV. This is a course on mental health nursing that is taught twice in 8 week sessions or "mini-mesters." The first session included 30 students, and the second session included 31 students. In each session, a case study on a female patient who was suffering from an eating disorder (anorexia nervosa with purging) was used. The pre-briefing consisted of an online podcast on the UCBA Department of Nursing's Concept of Self with the exemplar of Eating Disorders, and an in class Power Point presentation on the Concept of Violence, with the Exemplar of Suicide. The lead author prepared these classroom materials. The case study used as the base for the simulation was found online (St. John of God Healthcare, 2014), but was not provided to the students prior to class.

Value of One-Minute Simulation

We have been using One Minute Simulation in the classroom for three years. Students report positive experiences, and express improved confidence in understanding how to apply general concepts discussed in class to an actual patient care setting than prior to the simulation. One Minute Simulation forces students to think proactively. For example, while one student is performing one action, the other students must be thinking about the next step. If a student still sitting in the class decides on the next step but yet another student gets called first and "beats them to the punch," then the student must have an alternate action in mind. This is the ultimate goal of nursing education, according to Benner (1984): to encourage "Future Think" and the ability to identify and deal with problems *before* they occur. The next step for One Minute Simulation will be the implementation of a pilot study to measure student learning and confidence before and after the simulation.

Conclusions

The speed and ease with which One Minute Simulation can be implemented makes it ideal as an exercise to allow students to work on applying theoretical concepts to actual nursing practice. Success in simulation requires student engagement, and the proactive thinking required encourages progression of student thinking away from the rigid and rule bound thinking of novice nurses as described by Benner (1984), and towards the goal of clinical reasoning.

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