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Nursing fundamentals – supporting clinical competency online during the COVID-19 pandemic

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ABSTRACT

During the Spring of 2020, due to the COVID-19 pandemic, many schools of nursing were challenged to change their educational delivery methods from a face-to-face to an online format. This article discusses educational strategies utilized to support clinical competency using an online format for a fundamentals of nursing clinical course. Discussions of regulatory considerations, faculty planning, and teaching pedagogy utilized during this transition are presented. The authors also discuss future implications and suggestions for attaining learning objectives for a clinical course using an online format.

Introduction and background

March 19, 2020 marked the beginning of the Safer at Home Order to slow the spread of COVID-19 (Exec. Order 33-20, 2020). Only essential services remained open and most hospitals closed their doors to clinical nursing rotations to manage the spread of the disease. For many nursing schools, there were 8 weeks of the semester remaining. The aim of this article is to discuss the steps taken to assure a fundamentals nursing clinical course learning objectives were attained for 80, first semester nursing students in an online environment.

Traditional competency evaluation in clinical nursing

Nursing schools typically rely on clinical agency placements to support students in the assimilation of didactic theory to application. Nurses employed by clinical agencies are often expected to participate in the oversight and supervision of student nurses. This process for evaluating clinical application has been in place with little modification for the past 40 years (Benner, Sutphen, Leonard & Day, 2010). In a comprehensive literature synthesis on the topic of clinical evaluation in nursing, Lewallen and Van Horn (2019) found there was a significant need for future research involving validated tools and processes for the evaluation of student competencies in the clinical setting.

Core technologies utilized

The use of technology in pedagogical practices creates a learning environment where students learn via exploration not content consumption (Shellenbarger & Robb, 2015). A major factor when considering use of a technology tool is whether it supports learning and facilitates meeting the course objectives (Oermann, 2015). Since
none of the instructors for the fundamentals course had taught online, it was necessary to be mindful when selecting resources and to provide a structured schedule. Factors such as availability, ease of use, and facilitation of the learning objectives were considered. The following technologies were used.

**Zoom**

Our campus provided access to Zoom for online classes. Zoom’s tools for engagement include audio and video, breakout room capability, chat, recording, polling, and reactions to augment learning. Technological requirements were discussed with the students and expectations for professional online etiquette were reviewed and upheld.

**Virtual reality and augmented reality simulations**

Redistribution of clinical agency to simulation hours yields comparable results, without negatively affecting competency or licensure examination results (Mancini, LeFlore & Cipher, 2019). As our school had limited funding we utilized open source simulations (NurseTim, MedEdu – Easy Auscultation), Assessment Technology Incorporated products (video case studies, RealLife Clinical Reasoning scenarios, skills modules), Kaplan’s virtual patient encounter (iHuman), and homemade videos to supplement learning.

**Rules of engagement**

Evidence supports active learning strategies foster critical thinking and is more beneficial than passive learning, which does not typically facilitate higher level cognitive skills (Scheckel, 2020). Active learning increases students’ awareness of their learning (Moroe-Cox, 2017) and supports development of autonomous decision-making in the clinical setting (Brown Tyo & McCurry, 2019). The techniques utilized in the online clinical course included expert practitioner role modeling, case-based learning, distributed learning in various group sizes, role playing, and instructor facilitated debriefing and self-reflection. These strategies helped students actively process information and demonstrate the ability to assess cues, evaluate assumptions, and apply evidenced-based knowledge (Shellenbarger & Robb, 2015).

Social presence greatly influences online learning, the attainment of learning outcomes, perceived learning, and student satisfaction (Akcaoglu & Lee, 2016; Weidlich & Bastiaens, 2017). Social presence primarily concerns student-to-student interactions, is formal, involving those in the context of the learning task as well as informal, social interactions (Weidlich & Bastiaens, 2017). The use of small groups allows for more opportunity for interaction, the ability to voice an opinion or contribute to the discussion, and promotes social presence (Akcaoglu & Lee, 2016). Technology also helps students by capitalizing on their desire to engage in discovery and work with peers (Shellenbarger & Robb, 2015).

During the online clinical classes, the instructors promoted social presence by setting expectations about how to interact in an online forum. This included discussing how knowledge (preparation), habits of passivity, and embarrassment are blocks to learning (Shellenbarger & Robb, 2015). The students were instructed to be aware of their blocks and mitigate them to increase engagement and learning. The students agreed to fully engage for their benefit and the benefits of their future patients.

**Teaching strategy I – thinking like a nurse**

One major goal of the nursing fundamentals course was to teach novice student nurses how to apply deliberate, skillful, responsible, and thoughtful critical thinking strategies to promote clinical reasoning (Caputi, 2020). Teaching students how to apply clinical reasoning is usually done through the experience of practice. Through practice, students develop a sense of salience that helps order thinking and aid in decision-making (Benner et al., 2010; Brown Tyo & McCurry 2019). Case studies, simulation, group discussion, and reflection are documented as successful teaching strategies and may be applied to online learning to effectively assess and promote clinical reasoning development (Brown Tyo & McCurry, 2019).

In order to capture this type of applied learning, a definitive structure needed to be put into place to guide the development of clinical reasoning. Key activities included developing a nursing care plan, deconstructing the care plan for cues and clarifying assumptions, and providing rationale for actions and further information seeking.

In order to facilitate achievement of this goal, the following was done.

- Each week the students completed a care plan prior to the clinical day. Since the students had only completed one care plan, it was important to have these learning experiences to understand the nursing process and its application. Each student completed the same care plan and was instructed to work alone.
- Virtual class discussions utilized Socratic questioning and Tanner’s Clinical Judgment Model was applied. Socratic questioning is learner-centered and enhances critical thinking and self-reflection (Dinkins & Cangelosi, 2019). This dovetails with Tanner’s Clinical Judgment Model which includes noticing, interpreting, responding, and reflecting and aids in the thinking process (Caputi, 2020).

Questions such as: “What do you think about...?”; “what did you notice about...?”; “how would you interpret...?”; “how would you prioritize...?”; “how would you respond to...?”; and “what information do you need?” were asked. The students responded by raising their hand. Those that did not respond, were called upon, and once all had contributed, the class moved on. Over time, the authors found that the students participated voluntarily and more frequently.

- The instructor reviewed the students’ care plans prior to the start of the virtual clinical day and divided the students into five groups based upon their understanding. The group topics were pathophysiology, labs and diagnostic tests, medications, nursing diagnosis, and nursing interventions. During class, the students were given 30 minutes to evaluate an assigned topic and discuss what information was pertinent. During the small group sessions, the instructor offered insight as needed. As a class, each group presented their topic, the content was analyzed, and the Socratic process was used to close knowledge gaps and increase the students understanding.

The student led discussions required active engagement, where academically challenging, and allowed learning from peers. The process of cooperative learning increases engagement and creates a sense of community and cohesion (Akcaoglu & Lee, 2016). This deliberate practice occurred weekly, providing the necessary repetition to foster clinical reasoning (Caputi, 2020). This process allowed for student discovery of important situational cues in the patient scenarios, added to their knowledge base, and improved their clinical reasoning skills.

**Teaching strategy II – deliberate practice of communication**

Effective professional communication between nurses and other health care providers is necessary to provide safe patient care (The Joint Commission, 2017) and is a skill that is introduced and honed in nursing school. A structured hand-off report, such as the use of ISBAR (Introduction, Situation, Background Assessment, Recommendation), can mitigate communication errors by helping nursing students
perform hand-off communication more consistently (Yeh et al., 2019). These nursing students had only heard three change of shift reports and written two ISBAR examples.

Deliberate practice can decrease stress and anxiety by allowing students to concentrate on the steps of skills, self-correction, and mastery attainment (Johnson, Kimble, Cunby & Davis, 2020). Regular engagement in deliberate practice improves self-confidence, mastery learning, and shift report (Yeh et al., 2019). Online activities were developed to allow for deliberate practice and included:

- Observation of an interactive case study of varying clinical scenarios;
- Viewing of an incomplete and unprofessional change of shift report;
- Informal 1:1 student presentation of ISBAR, critiqued by peers and instructor; and
- Formal 1:1 student presentations of change of shift report and ISBAR.

**Teaching strategy III – technology enhanced physical assessment/virtual simulation based education**

Simulation is an integral part of the curriculum at this school of nursing and transitioning to an online format required realignment of some teaching strategies to assess how the student’s learning outcomes would be met. The International Nursing Association for Clinical Simulation and Learning Standards of Best Practice for Simulation were utilized: prework/prebrief, facilitation, and debriefing with each simulation (INACSL, 2016). Debriefing after observing a simulation is often touted as the place where learning takes place in simulation-based education (Freytag, Stroben, Hautz, Eisenmann & Kämmer, 2017). A recent study indicates there is a benefit of self-debriefing immediately after a simulation, followed by a group debriefing with the facilitation of an instructor with expertise to gain maximum learning. This study identified the benefit of expert faculty facilitation as fortifying knowledge acquisition by identifying gaps, deepening understanding, and discussing application in practice (Verkuyl et al., 2020).

A primary responsibility of a first semester clinical instructor is to ensure competency of basic nursing psychomotor skills such as vital signs, medication administration, and beginning physical assessments (Johnson et al., 2020). Simulated learning allows the student to make near misses and errors and learn from them, something that should not be done in an agency setting (Owen, Garbett, Coburn & Amar, 2017). Having the opportunity to practice skills and improve clinical reasoning in a safe and nonthreatening environment allows for more focus, increased confidence, and skills acquisition (Stewart, Greene & Coke, 2018). Group participation allows students to identify mistakes through peer observation, receive support from peers, and allows the students to take on the role of coach (Aldridge & Hummel, 2019; Badowski & Oosterhouse, 2017; Johnson et al., 2020).

Auscultatory skills of heart, lung, and Korotkoff sounds were taught and reinforced using MedEdu – Easy Auscultation. The students listened to the sounds, read the definitions, and reference guide prior to the clinical day. Virtual lessons were completed as a group and the students were competitive and actively engaged. Once a student answered, they had to state their answer and rationale. If the student was incorrect, another student answered, this continued until the lessons were completed. Again, this made learning more deliberate and repetitive which fostered clinical reasoning and allowed the instructor to evaluate the student’s level of understanding.

Since completing a physical assessment and obtaining vital signs were new skills for the students, the expectation was the student would complete these skills weekly on a family member or friend they lived with. During the clinical time the students shared their findings, discussed difficulties that arose, and their attempts to resolve these issues. The students said they appreciated this homework because it allowed them to share what they were learning with their families and friends and made them feel proud to be a nursing student.

**Relevance to clinical practice**

The most important challenge was ensuring appropriate learning activities were utilized to successfully meet the learning objectives in this nursing fundamentals clinical course that was emergently switched to an online format. This was achieved with care plans, interactive case studies, web-based learning activities, written work, communication activities, and class discussions. Although the students did not have the traditional clinical experience, the time the instructors spent with each student, and the given learning activities which fostered clinical reasoning was far greater in the online verses face-to-face format. Valuable clinical time spent as a group allowed for deliberate practice, social presence, peer observation, support, and group reflection. These deliberate activities enabled transparent assessment of core learning objectives and students clinical reasoning abilities, despite the missing traditional patient care component.

**Future implications and considerations for teaching practice suggestions**

In order to engage students in learning multiple ways of thinking and clinical reasoning, instructors need to utilize effective teaching strategies whether in an agency or online setting (Benner et al., 2010; Brown Tyo & McCurry, 2019). Faculty development and competency in online pedagogical practices are related to retention and satisfaction for faculty and students (King & Nininger, 2019). Since most instructors teach how they were taught, have not taught an online course, or received any formal education in online instruction, the opportunity is ripe for faculty development (King & Nininger, 2019). Schools of nursing need to urgently offer formal training on best practices in online education to ensure the instructor is equipped with the necessary knowledge to successfully teach an online course.

From this experience, we learned that it is feasible to teach a nursing fundamentals course in an online format for a portion of the semester. Implementation of online active learning techniques as a regular adjunct to traditional clinical practice could improve learning outcomes and transform our students into graduates that are worksafe ready.

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