Nursing Research and Evidence-Based Practice

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Description

Despite the rapid development of the pandemic that evolved in 2020, the American Association of Colleges of Nursing (AACN) saw a 3.3% increase in students seeking entry into nursing programs. Although nursing programs are seeing a sharp incline in applications, in 2021, 76,140 students were unfortunately turned away for admission to baccalaureate programs. Many factors, such as budget cuts, faculty shortage, and classroom space, had a significant impact on nursing programs not accepting the admission of all qualified students. However, a lack of clinical placement was the primary challenge in denying entry. As the complexity of health care delivery continues to rise and nursing errors are reported daily, many acute care facilities are implementing various client safety initiatives, including limiting the number of nursing students allowed to be in client care units. Although many barriers have been presented against nursing education and clinical placement, nurse educators have adopted alternate methods for clinical experiences, such as simulation and scenario-based training.

Virtual reality is a newer form of technology that has recently surfaced in health-based programs. VR is a computer-simulated, interactive three-dimensional (3D) environment that creates a "first-person active learning experience through different degrees of immersion". Since VR is highly immersive, real clients can be simulated, providing nursing students with a more advanced clinical-focused training experience via simulation. Chen et al.'s meta-analysis found that VR immersions increased the knowledge among students because the experience fostered the students' understanding of didactic concepts.

Important Step in Scenario Development

An important step in scenario development is planning for the knowledge level of students, ensuring that goals and objectives are appropriate, and that faculty know the intended outcome. Using Bloom's taxonomy, the nursing faculty collaborated and determined appropriate learning objectives for each of the three parts of the scenario. After establishing objectives, the nursing faculty created an unfolding three-part client scenario involving the progression of the same client as the condition worsens. All three parts of the scenario incorporated communication concepts, pain and physical assessments, cultural awareness, medication administration, allergy identification, and environment/safety issues. Most importantly, the unfolding case study was infused with the clinical judgment model, such as recognizing cues by observing trends, prioritizing interventions by analysing information, and taking action, similar to the NextGen nclex format.

The nursing faculty team constructed all three scenario aspects (the client's physical appearance and condition status for each scenario part; medical, surgical, and social history; allergies; physical examination; and healthcare provider and nursing notes). Part one scenario was designed for the novice student. In this scenario, a client is being admitted from the emergency department to the nursing unit with complaints of abdominal pain. Once on the nursing unit, the healthcare provider orders lab work to be collected. The team intentionally included lab work that reflected a downward trend, incorporating the clinical judgment model of recognizing cues. This step in the clinical judgment model requires students to identify actual and potential problems by observing and interpreting data.

Part two scenario, which is a continuation of part one, was designed for the intermediate student. In this part of the scenario, the client begins to decline, and subsequently, the healthcare provider electronically enters a series of orders. The student must implement the orders based on priority, which reflects the analyzing and prioritizing step in the clinical judgment model. In these steps, the student establishes care priorities based on the client's health problems and/or diagnostic tests.

Part three scenario, a continuance of parts one and two, was designed for the advanced student. In this part of the scenario, the healthcare provider orders the client to receive a blood transfusion, highlighting the Take action step of the clinical judgment model. The student must implement appropriate interventions based on knowledge, priority, and expected outcomes to ensure safety while promoting care. In addition to the clinical judgment model, the three parts of the scenario include active engagement, such as measuring intake and output, administering medications, inserting a nasogastric tube and Intravenous Catheters (IVs), and applying oxygen via nasal cannula, communicating with the family, contacting the healthcare provider, and providing discharge orders.

Another important aspect of creating clinical scenarios is to ensure the content is valid and relevant to current nursing practice. The nursing faculty team ensured that all nursing interventions, medications, and diagnostic test results/notes included in the client's past history and present situation aligned with current medical-surgical literature/theory and evidence-based clinical practices. Furthermore, the nursing faculty team validated the delivery of client care by using the clinical judgment model as the foundation for the identified nursing actions. Once the nursing faculty team completed the scenario development, the technology specialist's team began creating the client, the client's family, and other healthcare team members' avatars, as well as the clinical environment layout (client room, bathroom, nursing station, electronic medical record, etc). The team felt it would be highly beneficial to ensure these elements mirrored the clinical environment as much as possible.

Since some students will be hesitant to use VR because of age, lack of experience, or comfort level, creating an onboarding and orientation tutorial was a high priority for the technology specialist team. Additionally, to optimize the experience for accessibility, the technology specialist team designed the scenarios so that students could complete the experience in a seated or standing position. Furthermore, the dialog was written with pops up within the scenarios, which supports the differently abled or non-native English students. The onboarding and orientation tutorial allowed students to familiarize their self with the controller and object interactions, such as washing hands and walking around the hospital unit/client room.