Teaching Principles of Assessment, Data Collection, and Prioritization: Using a Case Scenario

The American Association of Colleges of Nursing (AACN) promotes educational approaches that actively engage learners to better prepare them for today’s challenging health care environment. More specifically, the AACN (2009) encourages opportunities or assignments for students to engage in case study discussions to improve critical thinking skills that will ultimately improve patient health outcomes.

Similarly, as a means of helping students understand the “big picture,” Billings and Halstead (2009) and Levin and Faldman (2005) support the pedagogical value of using evidence-based teaching methods, such as case scenarios, to improve clinical decision making skills and abilities among students. This article describes a teaching method using a case scenario that supports both of these perspectives.

Case Scenario

An 87-year-old woman with type 2 diabetes mellitus was admitted to the hospital with a diagnosis of hyperglycemia secondary to an infected ulcer of her lower leg. She is 5 feet 4 inches tall and weighs 215 pounds. Her blood sugar has been elevated >400 mg/dL for the past week, and she has a fever of 101°F. Her prealbumin level is 10.2 mg/dL. Her medical history documents an allergy to penicillin. Current home medications include Glucotrol® (glipizide), Glucophage® (metformin), Neurontin® (gabapentin), Vasotec® (enalapril), Benicar® (olmesartan medoxomil), Lopid® (gemfibrozil), a daily aspirin, and over-the-counter calcitonin. The health care provider’s orders are brief and include: intravenous ½ normal saline at 75 mL/hour, Ancef (cefazolin) 1 g intravenous piggyback every 8 hours, blood sugar level monitoring, and mexitillin-resistant Staphylococcus aureus contact precautions.

Description of Learning Activity

Multiple variables such as age, polypharmacy, and comorbidities influence the management of older adults. Correspondingly, multiple variables may impact availability of patient assignments in the clinical environment.

During times of low patient census, an alternative plan to engage students in assessment, data collection, and prioritization was implemented using the case scenario described in this article. The setting was a large conference room within the hospital. Eight junior-level nursing students were provided the case scenario as a group assignment. Textbooks and PDA resources were allowed. The clinical instructor served as facilitator of the learning activity while encouraging independent thinking among students to foster comprehension of critical concepts.

Goals and Objectives

Students were instructed to view the patient described in the case scenario as though assigned within the clinical unit. Performance expectations were for students to prioritize patient diagnoses, describe assessment criteria consistent with an expected knowledge base, plan appropriate nursing interventions, and identify significant educational needs. Additional areas of educational focus included drug therapy, nutritional status, monitoring of laboratory values, and infection control issues.

Outcomes

The assignment promoted use of the nursing process and incorporated multiple areas of learning, including thorough collection of historical data, refinement of geriatric physical assessment skills, and prioritization of care delivery in an elderly patient with multiple inter-related health problems. Because historical data in the case scenario were incomplete and the physician’s orders were insufficient to properly manage the patient’s care, students were challenged to critically analyze the information provided and identify missing or incomplete patient data.

Incomplete data identified by students included duration of diabetes and history of prior glycemic control, the patient’s management regimen for treatment of type 2 diabetes mellitus (oral medications, insulin dependence, or both), and current laboratory data (glucose measurement, hemoglobin A1c level, and urine or serum ketones) suggesting possible ketoacidosis. Students prioritized patient diagnoses and identified a number of coexisting conditions, including hypertension, dyslipidemia, peripheral neuropathy, and venous insufficiency with risk for neurovascular compromise.

Aggressive management of uncontrolled hyperglycemia was determined to be the primary intervention. Students described educational needs, noted the importance of health promotion related to chronic disease management, and identified the need for regular follow-up examinations regarding hypertension, cardiovascular disease, and peripheral vascular disease.

Discussion

Use of a case scenario with a geriatric component was more aligned with “real-life” patients. Students discussed care of the fictional patient as though she was an actual patient assignment. Several students reflected on previous clinical learning experiences, whereas others talked of aging grandparents’ declining health.

Care-related changes made by the family and community resources to accommodate older adults’ needs were focal points of discussion. One idea mushroomed another. Interactivity, brainstorming, and sharing of ideas among group members promoted the development of creative solutions to patient problems. Desired goals and expected outcomes replaced actual ones; therefore, implementation and evaluation steps of nursing process were maintained.

Conclusion

Eight students benefited from one patient assignment in a collaborative learning environment. The assignment engaged students in case study discussion. Enhanced critical thinking skills were evidenced by students’ application of knowledge in the clinical setting. This teaching method provides relevant information that can be replicated in the
classroom, outside the classroom, and in online education.

**References**


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**Learning on the Move**

Research indicates that exercise, movement, and multisensory stimulation can positively affect learning and retention (Shams & Seitz, 2008; Winter et al., 2007). John Medina, molecular biologist and author of *Brain Rules: 12 Principles for Surviving and Thriving at Work, Home, and School* (2008), even suggested installing treadmills in the classroom! That may not be practical; however, it can be beneficial to develop assignments that include movement and increased sensory stimulation.

A group of 48 freshman students in a health issues course, commonly taken by nursing majors, completed an assignment that required walking around campus to gather information on health in developing nations. Prior to the assignment, students were presented with an overview of this topic and discussed factors that were relevant to international health. The objectives of the assignment were the following:

- Students will identify factors affecting health in developing nations.
- Students will use teamwork to complete a learning activity.
- Students will participate in a learning activity while performing aerobic activity (walking) in a multisensory environment (outdoors).

The instructor posted information on health issues in developing countries in 10 strategic locations on campus that related to each specific issue to stimulate students’ understanding of the concepts. For example, facts about the lack of clean drinking water were posted above a water fountain and material about poverty was displayed near an ATM. Information about limited transportation and poor road conditions was placed on a vehicle window in the parking lot adjacent to the classroom.

Students were divided into groups of three or four to complete a crossword puzzle that contained questions related to international health needs. The locations on the crossword puzzle, and students had to walk to each site and determine the answers from the material posted there. A sign-up sheet was available at each location to ensure that students visited all of the required sites.

Examples of crossword puzzle clues included (a) Many people in developing nations (more women than men) cannot perform this essential skill (Answer: reading); and (b) Hunger affects your ability to do this (Answer: learn). For the clue related to reading, statistics about literacy rates were posted in the library. Reading this information while surrounded by books helped provide a meaningful context to the concepts presented. For the clue regarding the issue of hunger, information and statistics on malnutrition and its effects on attention span and learning were placed near vending machines in the hallway outside the classroom to assist students in answering this question. Considering these statistics while standing next to a vending machine filled with a variety of food offered an environment that stimulated deeper thought about the issue.

As part of the assignment, students filled out a questionnaire to evaluate the experience. Using a Likert scale of 1 to 5, where 1 equals *strongly disagree* and 5 equals *strongly agree*, 37 of the 48 students (77%) responded with a 4 or 5 to the statement “This activity improved my knowledge about health in developing countries.” Thirty-nine of the 48 students (81%) responded with a 4 or 5 to the statement “I enjoy learning activities that allow me to be active.”

Student comments included “We got to move around and be active at the same time as learning something new” and “It was fun to learn by going and looking for the answers—much better than sitting and listening to a lecture.” Another stated, “I liked that while I learned about developing countries I could look around campus and feel thankful to be drinking clean water and getting an education.” Suggestions for improvement included eliminating the sign-up sheets because they caused congestion at the information sites and using a map to direct students to the sites instead of listing them.

This assignment could be adapted easily to a variety of topics, including nutrition, obesity, and the effects of socioeconomic status on health. It provided a learning environment that included active movement and that was contextually rich and stimulating. When students were asked what they liked about the assignment, one student summed up the experience by saying, “It was a beautiful day and we were outside.”

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