

Designing a Content and Process-Based Applied Pharmacology in Advanced Practice Nursing Seminar

To prepare master's advanced practice nursing students for real-life pharmacotherapy applications, we developed a course designed to review and apply pharmacologic principals using the concepts of content and process. The purpose of this course, co-taught by an advanced registered nurse practitioner (ARNP) and a clinical pharmacist, was to train family, adult and geriatric, and certified nurse midwife advanced practice nursing students to use critical thinking in complex evolving situations. Didactic reviews of pharmacologic principles (i.e., content) were provided weekly, followed by the application of these principals using extensive family-based unfolding case studies (i.e., process). This course model was guided by Kolb (1984), who proposed that experiential learning is pivotal and encouraged educators to improve the delivery of content by creating opportunities for students to experience authentic situations and reflect the content as they learned.

The didactic content component was led by a clinical pharmacist and reinforced pharmacology learned during previous pharmacology courses. Each week, students prepared readings and discussion questions, then attended an hour-long class. An online "Ask Us Anything About Pharmacology" discussion board and free-content review sessions were offered throughout the course to address areas of uncertainty. Two classrooms were used to facilitate the course—in one classroom, approximately 30 students were presented with pharmacology content, whereas in the second classroom,

another 30 students participated in the case study process component. After an hour, the ARNP and clinical pharmacist faculty switched classrooms and the process was repeated, ensuring that during the 2-hour course, each student received 1 hour of didactic training and 1 hour of case study-based discussion.

For the process component, unfolding extended family case studies were developed. Each family member presented with a variety of chronic health conditions and acute symptoms. Students received a weekly case study involving a family member presenting to their primary care provider with a complaint designed to emphasize pharmacologic considerations presented during the previous week's didactic lecture. The students had a week to review the case and complete a brief written assignment that focused on key pharmacologic considerations. During the following class, a group of students (5 to 6 students in each group) presented the case study, provided evidence-based answers to the assignment, and led the class in a discussion of options and considerations facilitated by the ARNP faculty. The theory of the comprehensive group-learning model by Ulrich and Glendon (2005) set the groundwork for the process component of unfolding family case studies, which attempted to meet the desired outcomes of learning facts, as well as critical analyses.

Because the case study presentation reflected the didactic training from the previous week, students learned and applied information in a variety of formats using experience and repetition to encourage learning. Similarly, the family nature and interconnectedness of the

unfolding case studies promoted the application of pharmacology content to a variety of patients with unique medical profiles, encouraging the development of critical thinking skills. The student-led discussions encouraged team building, while the use of an interdisciplinary faculty team promoted the concept of interdisciplinary teamwork.

The model of education described in this article may be useful to those who seek a unique nursing pedagogy. Students responded to the collaborative ARNP-clinical pharmacist educational efforts with strong participation and positive comments. End-of-term evaluations stated that the unfolding case study provided needed reinforcement of pharmacology, and many students commented on the value of a multidisciplinary teaching approach. Dividing the course into content and process appeared to enhance learning and allowed students to gain confidence with an area of learning that can otherwise be challenging.

References

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