



Featured Article

Using Simulation to Prepare for Clinicals in Front-Loaded FNP Curricula

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KEYWORDS

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course sequencing;
preparedness

Abstract

Background: Transitioning from a Master of Science degree to a Doctorate of Nursing Practice degree in a Family Nurse Practitioner program presents a challenge in course sequencing. If DNP coursework is placed after concurrent clinical and didactic courses, students will encounter situations in clinical that they have not studied in the didactic arena (increasing preceptor burden) and complete their clinicals a year before graduation. We adopted a front-loaded course sequence, placing didactic management courses before the start of clinical courses. However, students would now be exposed to didactic management content a year before beginning clinical.

Methods: To enhance readiness for clinicals, we implemented a program, "Conquering Clinical," which included a full day of simulation that reviewed four scenarios frequently encountered in primary care.

Results: The students reported feeling both more confident and more competent in conducting a primary care encounter.

Conclusion: A preclinical preparation program is beneficial to both students and preceptors.

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The doctorate of nursing practice (DNP) degree has been the recommended terminal degree for advanced nursing practice preparation since the American Association of Colleges of Nursing published a position article on this

topic in 2004 (AACN, 2004). The National Organization of Nurse Practitioner Faculties recommends a seamless, integrated DNP curriculum (NONPF, 2016). The term seamless refers to a continuous baccalaureate of science in nursing (BSN) degree-to-DNP degree, without a master of science (MS) degree exit point. Although many schools have completed this transition, many others have not. Currently, there are 205 schools offering a postbaccalaureate DNP

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nurse practitioner program. Of these, 192 offer a family nurse practitioner (FNP) program. 355 schools continue to offer a master’s level FNP program (AACN, 2019).

When the University of Illinois at Chicago College of Nursing first offered the DNP degree to FNP students, it did

Key Points

- Front-loaded FNP programs offer all didactic content prior to the start of clinicals.
- With front-loaded FNP programs there is a lag-time between studying common conditions and the start of clinicals.
- A refresher course, which includes simulation, enhances students’ perceived confidence and competence as they start clinicals.

so by adding the DNP project coursework to the end of the well-established masters of science curriculum. With this curriculum template, students were enrolled in both didactic management courses and clinical practicum courses simultaneously. This is sometimes referred to as an “integrated” curriculum (Gardenier, Hicks, & Crowley-Koschnitzki, 2017).

There were several negative aspects to this integrated curriculum plan. Students would often encounter a patient situation in their clinical site with their preceptor before having exposure to this topic in

their didactic management courses. For example, a student may encounter a patient with a migraine headache in the first semester of clinical but would not have the neurology module of didactic coursework until the following semester. This put undue burden on preceptors, who would have to explain the basics of assessment and management of the yet unlearned condition. Owing to the paucity of preceptors and clinical sites, students were not able to be with a pediatric or women’s health preceptor when they were studying well-child care or well-woman care, thus somewhat defeating the premise of integration. Another problem we encountered with the integrated program plan was that students would have a full year after completing their clinical practicum and didactic management courses before they completed their DNP degree requirements and were eligible to take their board examinations.

An alternative to the integrated curriculum is the front-loaded curriculum. In this program plan, didactic management courses are “front-loaded” in the curriculum. Once these management courses are successfully completed, along with all of the scientific foundation and health promotion courses, students are eligible to start the intensive clinical practicum courses. Table 1 depicts course sequencing in an integrated versus front-loaded curriculum plan.

In 2017, as we transitioned our FNP program to a front-loaded program, we realized that students may have learned about common health conditions a full year before they would encounter their first clinic patient. To address the

Table 1 Courses of Study Overview				
Courses of Study Overview	Year 1	Year 2	Year 3	Year 4
Precourse of study revision (Integrated program plan)	Foundational sciences	Core courses	FNP-specialty didactic courses	DNP project courses
Postcourse of study revision (Front-loaded program plan)	Core courses	FNP-specialty didactic courses	FNP-specialty clinical courses	FNP-specialty clinical courses
	Foundational Sciences	Core courses	Core courses	DNP project courses
	Core Courses	FNP-specialty didactic courses	FNP-specialty didactic courses	
FNP = family nurse practitioner; DNP = doctorate of nursing practice.				

Table 2 Scenario Descriptions

Scenario	Brief Description	Objectives	Actor Instructions
Cough	The patient presents to a retail clinic with a cough for two weeks. She believes she needs an antibiotic, (“a Z-pack”).	• Obtain a focused history from the patient • Develop differential diagnoses for the patient • Develop an in-clinic management plan, including a strong script to deliver to patients with an upper respiratory infection on why antibiotics are not indicated for viral infections • Offer over-the-counter remedies for symptom management plan for viral upper respiratory infections • Develop a follow-up plan for the patient	You are a 36-year-old with a bad cough. Your symptoms started two weeks ago as a typical cold (congestion, sneezing, runny nose). Your husband has also been sick with similar symptoms. He went to his primary care provider and was prescribed a Z-pack. You think you need one, too, especially because you will be travelling to Europe in a few days on business and you “cannot be sick.” You thought you would be better after a few days like you usually are with colds.
Low back pain	A middle-aged patient with a 4-day history of low back pain (after helping a friend move) requests strong pain-killers and imaging.	• Perform an appropriate history and physical examination on a patient with low back pain • Develop a list of differential diagnoses for the patient • Discuss appropriate analgesia for this patient • Discuss appropriate imaging strategies for this patient, if any • Provide an appropriate follow-up plan for the patient	You are a 44-year-old patient. You injured your back 4 days ago, while helping your friend move. You knew you should not have attempted to lift the sofa, but you did not think it would be as heavy as it was. Your back hurts worse when you are sitting down. You have taken Tylenol for the pain, but it has barely touched it. You have never had this before. You are pacing in the examination room (as sitting is painful). You know that you need narcotics for the pain and an MRI to determine if you have “bulging discs”.
Male dysuria	A 26-year-old male presents as a same day new patient to the clinic office. He reports 3-4 days of dysuria. A sexual history reveals that 7 days prior to this appointment he had unprotected insertive anal sex.	• Perform an appropriate history and physical examination, including a sexual history • Discuss appropriate physical examination that would be performed on an actual patient (genital examination not performed on actor) • Develop differential diagnoses for a young sexually active male with dysuria, particularly in distinguishing between <i>Escherichia coli</i> urinary tract infection and sexually transmitted infection • Recommend testing for all sexually transmitted infections, including appropriate point of care testing and sample collection (clean catch vs. nonclean catch) • Discuss sexual risk reduction, including HIV pre-exposure prophylaxis • Provide an appropriate follow-up plan for the patient	You are a 26-year-old male. You have had burning with urination for the past 4 days. You have never had this before. You are engaged to be married to your fiancé Cindy. You think you have a urinary tract infection (UTI) because Cindy says that she has burning with urination when she has a UTI. However, on a recent business trip to Montreal, you had unprotected insertive anal sex with an anonymous man. This was not the first time you have had sex with a man. You do not reveal this right away. You are very worried that Cindy will find out about this and call off the wedding. You have a nervous, embarrassed, shy demeanor, as you have not seen a health care provider since college.

(continued on next page)

Table 2 (continued)

Scenario	Brief Description	Objectives	Actor Instructions
Lab call scenario	A 4-year-old girl was seen in a family practice office 2 days ago for a sore throat. The FNP student is now following up with the results of the strep throat culture. This encounter is 3 phone calls. One actor can play all 3 parts and can be either a male or female.	• Be comfortable making phone calls to lab, parent, and pharmacy • Determine appropriate pharmacologic and nonpharmacologic treatment of Group A Strep pharyngitis • Provide patient education for Group A beta-hemolytic strep throat infection • Accurately call in prescriptions with all necessary information	1. Lab call • Student to call lab asking for Strep culture results. Student to provide patient information (name, date of birth, medical record number) to lab tech. If information is missing, ask student to provide it. • Lab tech responds: Culture result is positive for group A <i>Streptococcus</i> • Student to determine the appropriate antibiotic and dose for the child 2. Call to parent • FNP student to inform parent of throat culture results. • When asked by student provide information • Allergies: No allergies to any medication • Provide pharmacy phone number or location • Student will provide medication and nonpharmacological treatment plan, patient education, and discuss worrisome symptoms requiring a return to the clinic. 3. Call to pharmacy • Answer phone: pharmacist, may I help you? • Student will provide instructions for an antibiotic • If information is not provided, ask for it. • Information needed to be given by student: • Patient name, date of birth, weight • Medication name, strength • Sig: route, dose, frequency of dosing, length of treatment • Dispense • Refills: 0 • Provider name • Practice phone number

time gap between the didactic and clinical courses as well as the typical “start of clinical” anxiety, FNP faculty implemented “Conquering Clinical,” a three-step program to enhance readiness for clinical practice. In step one, students completed preparatory review of ten brief modules covering common conditions and treatments. Step two was a skills workshop that included a review of pelvic examinations, family planning procedures, and dermatologic

procedures, such as suturing and punch biopsies. Step three was a full-day simulation that included four scenarios of common primary care complaints. Immediately after completion of “Conquering Clinical,” students were allowed to start clinical rotations with their preceptors. This article will explain in detail the use of simulation to prepare students for their first clinical experience in a front-loaded FNP program.

Scenario Development

Kolb’s theory of experiential learning was used to inform this simulation experience (Kolb & Kolb, 2017). The premise of Kolb’s theory is that experience builds competency that further influences subsequent experience. A key component of experiential learning theory is a reflective process that promotes further insight and competence in the experience. The simulation scenarios were developed by faculty who have completed an institutional simulation training program that was developed by a faculty member who is a certified health care simulation educator (Woroch, Alvarez, Yingling & Taylor Handrup, 2018). This four-module program (introduction to simulation, principles of simulation, debriefing, and evaluation) was developed to provide comprehensive simulation training to faculty.

Before the transition to the front-loaded program, FNP faculty interviewed preceptors, reviewed the most recent program evaluation by graduates, and performed case log reviews of previous student cohorts to determine scenarios that would best promote readiness for clinical practice. The International Nursing Association for Clinical Simulation and Learning standards of best practice were used as a guideline for scenario development (INACSL, 2016). The faculty agreed that the scenarios would focus on health concerns commonly seen in an acute care setting, such as an urgent care clinic. The encounters included cough, low back pain, dysuria in a male, and a lab call for a throat culture positive for group A beta-hemolytic streptococcus in a child, requiring a dosing calculation and telephone call to the parent and pharmacy. Table 2 lists a brief description of each scenario, the objectives of each scenario, and the actor instructions.

Forty-two students participated in the simulation, 27 in Chicago and 15 at regional campuses. Students were randomly assigned into groups of six or seven students. Each scenario was allotted 1 hour and 15 minutes, 45 minutes for the scenario and 30 minutes for the debriefing. We used the 3D Model of Debriefing (Zigmont, Kappus, & Sudikoff, 2011). Faculty who facilitated the debriefing had completed an institutional simulation training program which included a module on debriefing.

The students took turns in participating in different aspects of the encounter. One student would perform the history, another student would perform the physical examination, and a third student provided the management plan to the “patient.” Students who were not assigned a specific role were to closely observe the encounter and provide feedback. If a student had a question on how to proceed, they were instructed to make a “time-out” sign, to put the encounter on hold, while they asked their peers for suggestions on next steps. Roles were rotated for each scenario.

The scenarios were staffed with standardized patients hired from an internal roster of professional improvisational actors. These actors were trained in the scenario with a detailed case description, which included a history of the present illness, social history, and actor demeanor. In addition, each actor was coached by faculty in advance of the simulation. A faculty member who was unknown to the students played the role of the parent and pharmacist in the throat culture scenario.

Our institution’s Office for the Protection of Research Subjects classifies curricular improvements, such as the one reported here, as quality improvement work. As such, the Office for the Protection of Research Subjects does not require Institutional Review Board review of interventions that are educational in nature.

Debriefing

After each of the scenarios, the students participated in a debriefing session with a faculty member, who had completed debriefing training, and the actor. We used the 3D Model of Debriefing (Zigmont, Kappus, & Sudikoff, 2011). The 3D model is based on Kolb’s experiential learning theory, focusing on three main topics: defusing (allowing the venting of emotions that may have surfaced during the encounter), discovering (reflecting on their performance—what went well, not so well?), and deepening (consider what could have been performed differently). The students reflected on their roles as advanced practice registered

Table 3 Student Evaluation of the Simulation Experience (N = 40)

Student Evaluation of the Simulation Experience (N = 40)	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
As a result of today’s simulation experience, I feel more confident to begin my clinical rotation	5% (n = 2)	0	7.5% (n = 3)	40% (n = 16)	47.5% (n = 19)
As a result of today’s simulation experience, I feel more competent in conducting a primary care health care encounter	5% (n = 2)	0	12.5% (n = 5)	40% (n = 16)	42.5% (n = 17)
The clinical problems I addressed in simulation today were appropriate for a student at my level	5% (n = 2)	0	0	37.5% (n = 15)	57.5% (n = 23)

nurses, dealing with stressful situations, demanding patients, and emotionally painful encounters. The actors provided important feedback on how they felt as the “patient.”

Evaluation of the Simulation

Immediately after the completion of the four simulated scenarios, students were asked to complete a brief survey about the experience (Table 3). Surveys were anonymous and completed by 40 students. Most of the students, 87.5%, either agreed or strongly agreed that they felt more confident to begin their clinical rotations after their simulation experience. 82.5% of respondents agreed or strongly agreed that they felt more competent in conducting a primary care health care encounter. Two students strongly disagreed that simulation increased their confidence and competence in conducting a health care encounter. Although not documented in our survey, one student subsequently communicated that she felt “less confident” in starting clinical, as she realized how much of the didactic coursework she would need to review. All students reported that the time allotted for each scenario was “just right.” Several students commented that they would have preferred the simulation experience earlier in the semester, rather than immediately before the start of their clinical practicum.

Discussion

The transition from a BSN-to-MS or BSN-to-MSN degree program to a BSN-to-DNP degree program may pose a conundrum for program directors. Auerbach et al. (2014) reported that 65% of respondents to a RAND/American Association of Colleges of Nursing survey reported that assistance with curriculum patterns or plans would be very helpful in this transition process. Hicks argues that a curriculum in which the didactic content is front-loaded in the program decreases the burden on preceptors (Gardenier et al., 2017). In a front-loaded program, students have prior exposure in the classroom to the assessment and management of the acute and chronic conditions they are likely to encounter in the clinic setting. However, in a front-loaded program, a year or more may have passed between studying a topic in a didactic setting and the start of clinical. After participating in our three-part preclinical program, which included a full day of simulation, most students reported that they felt both more confident as they began their clinical rotation and more competent in their ability to conduct a primary care encounter.

Based on student feedback regarding placement of the simulation day in the semester (a preference to place the activity further in advance of the start of clinicals), we recommend others allow more time between the simulation and the start of clinicals. This will allow students time to address any knowledge gaps identified during the simulation before starting clinical rotations.

For faculty considering implementing a simulation such as ours, we make the following recommendations. When working with standardized patients, it can be a challenge to identify individuals who will permit urogenital examination. Although we did not use a task trainer for a urogenital examination in this iteration of the dysuria simulation, we intend to incorporate it into future iterations. Integration of this technique into the scenario will likely enrich the experience for the students. The focus of our measurement in this simulation was on student experience and perception. Those wishing to build off this work should consider measurement of knowledge and competence gain to better evaluate scenario efficacy.

Conclusion

The transition from a BSN-to-MS program to a BSN-to-DNP program is an ideal time to rethink curriculum sequencing. Placing didactic content before the start of clinical rotations (front-loading) may ease the burden on preceptors. For faculty who choose to implement a front-loaded curriculum, providing a refresher program that included simulation before the start of clinicals may increase confidence in FNP students as they begin their clinical rotations.

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