Improving Family Nurse Practitioner Students' Confidence for Clinical Decision Making and Presenting Patient Information to the Preceptor

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Background: Family nurse practitioner (FNP) students often lack the confidence to develop diagnostic skills and convey patient information to their clinical preceptor. Preparing FNP students for these tasks is essential to their clinical success. Objective: To describe the adequacy of interactive case studies to increase confidence in making clinical decisions and presenting patient information to the clinical preceptor. Methods: The authors developed three interactive case studies for student analysis during an on-campus intensive week prior to the students' first clinical rotation. Student confidence was examined pre and post to determine if the interactive cases had any effects on their diagnostic reasoning and skill in presenting patients to the preceptor. Results: The pretest survey found that students were least confident in presenting a patient to the preceptor (21% not confident). After the three interactive case studies, students demonstrated a significant increase in confidence. Conclusion: Interactive case studies and role-playing the patient presentation prior to an initial clinical rotation is a successful educational methodology for improving FNP students' confidence for the clinical environment. Implications for Nursing: Faculty can implement interactive case studies in traditional and online courses to foster student confidence.

Keywords: FNP students; interactive case studies; confidence; clinical decision making

Background

Preparing students for their initial clinical experience is important to their long-term success in nursing practice. This is particularly true for family nurse practitioner (FNP) students who are enrolled in an online Doctor of Nursing Practice (DNP) program. Faculty who teach in online DNP programs can prepare FNP students for their first clinical experience by developing creative interactive online experiences that increase students' knowledge and confidence. One technique that has been used to prepare FNP students for their initial clinical experience is the use of interactive case studies (ICSs). The American Association of Colleges

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of Nursing (2015) supports the use of ICS for improving student confidence in obtaining a relevant history, conducting an appropriate physical assessment, developing differential diagnoses, and initiating an accurate treatment plan.

Arbour, Nypaver, and Wika (2015) examined innovative uses of technology in an online midwifery program and discovered that the use of ICS equips students with the knowledge needed to formulate differential diagnoses and relevant plans of care. The researchers also found that the use of ICS provided students with in-depth knowledge that allowed them to better understand management of the patient by synthesizing subjective and objective data to arrive at a diagnosis. Further, interactive unfolding case studies required students to respond in a manner that closely resembles actual clinical practice, which makes this experience more beneficial. The purpose of using ICS pedagogy is to transform teaching into learning (Hong & Yu, 2017; Tomey, 2003; Yoo & Park, 2014). In ICS, the emphasis is placed on constructing and building knowledge instead of transferring the faculty's knowledge to the students. Colella and Beery (2014) studied the use of ICSs with nurse practitioner (NP) students who were distance learners in a differential diagnosis course. Distance students were compared to students who took classes on campus and utilized simulated patients to complete their assignments. Study findings revealed that ICS as a teaching modality was comparable to the face-to-face classroom experience. Students could ask questions, discuss the content, and proceed through the ICSs as if they were in clinical practice. Students were more confident with the decisions they made, and qualitative data suggested that distance learners benefited from using the ICS approach. In addition, ICSs provided an opportunity for self-reflection, which allowed students who had incorrect differential diagnoses an opportunity to identify errors made in their thought processes. Case studies can also be developed to challenge a student's ability to form good clinical judgments, make appropriate assessments, select the necessary laboratory and diagnostic tests, interpret laboratory and diagnostic results, formulate differential diagnoses, and plan patient care (Winkelman, Kelley, & Savrin, 2012).

The ICS approach prepares students to enter the workforce as NPs who are aware and capable of treating various illnesses. Previous studies have investigated FNP students' experiences in their final year of study (O'Rourke & Zerwic, 2016; Pittman, 2012). However, little is known about whether ICS can increase FNP online students' confidence in making decisions prior to entering the clinical setting. Even less is known as to whether ICS can increase student confidence in presenting patient information to the clinical preceptor. The purpose of this article is to describe the adequacy of ICS in improving FNP students' confidence in making clinical decisions and presenting patient information to the clinical preceptor.

Interactive Case Studies Delivery

Three ICSs were developed by faculty and then edited and evaluated by four experienced FNPs. Evidence-based guidelines (American Academy of Family Physicians, 2016) were also consulted to ensure accuracy and currency. All three case studies were intended to be common diagnoses with classic signs, symptoms, and presentations that would build on knowledge the students should have gained in an earlier health assessment course. The rationale for this was that students preparing for their initial clinical rotation have had little experience with complex decision making at this point.

Prior to the delivery of the three case studies, the faculty gave a PowerPoint presentation on how to present a patient to a preceptor. The faculty also provided students with the VisitCoding iPhone operating system application (iOS app) that would identify the appropriate evaluation and management code for the patient visits. Each interactive case began with the patient's chief complaint. Further, each case included questions to evaluate students' understanding of the elements of a history of presenting illness (HPI).

The first case involved an adolescent male patient with a complaint of sore throat, symptomatic of acute mononucleosis. The second case was a pediatric female patient with a complaint of unilateral ear pain, which represented otitis externa. The third case was an adult male complaining of a cough, indicative of acute bronchitis.

In each case, students were expected to first identify the components of the HPI. Second, students were asked to determine what questions they would ask to construct a pertinent medical history. Third, students were asked to choose which elements of the Review of Systems (ROS) should be addressed in that history. Fourth, students were asked to choose three differential diagnoses. Last, students were shown pictures and/or audio pertaining to each specific case. These included evaluation of a pharynx with enlarged tonsils and exudates, normal inner ear, an inner ear with erythema and bulging tympanic membrane, an external ear with erythema and edema, enlarged posterior cervical lymph nodes, and auscultation of rhonchi.

After completing these five steps, students were asked to select which diagnostic tests they would order, to document their findings, and to determine a final diagnosis. Students were allowed to consult

textbooks as they devised a plan of treatment for the patient.

Role-Playing

After students developed their final diagnoses and treatment plans, they practiced presenting their case studies in role-play. During the role-play, each student had an opportunity to practice delivering a patient presentation and receiving feedback from a student peer.

The faculty completed a final role-play activity with one student volunteer in front of the class. The student volunteer presented the clinical information from the case study to the faculty member who acted as the preceptor and responded to his or her questions for clarity on aspects of the history and physical examination that were missing. The "preceptor" also guided the student through developing a differential diagnosis, allowing all students to visualize a potential interaction between a student and a preceptor.

Procedure

Pre- and posttest questionnaires were conducted with electronic survey software and were distributed via the student university email. A link to the survey was also posted directly to the course announcements. In the email, participants were informed that they would be completing ICSs during their on-campus intensive week using classroom response system (clicker) technology that would be provided to them. Students were informed that the activity would be a formative experience to prepare them for their initial clinical rotation. Students completed the anonymous survey prior to the first class and completed the same survey 1 week later. The rationale for administering the posttest 1 week later was to measure the short-term impact on the students' confidence level.

Method

Design

A pre- and posttest design was used to evaluate the feasibility of improving the confidence of FNP students using ICSs. The university's Institutional Review Board (IRB) approved this educational project.

Sample

FNP students in a DNP program completed ICSs during an on-campus session. Students were from one Southern university. Students were eligible if they were currently enrolled in the initial advanced family nursing course but had not started a clinical rotation. Forty students who were enrolled in an across the lifespan FNP course were required to participate in the ICS session, but study participation was voluntary.

Questionnaire

A 5-item Likert questionnaire was developed to assess students' confidence in clinical decision making and presenting a patient to a preceptor. The questionnaire explored student confidence levels pertaining to: (a) collecting a focused health history, (b) assessing the Head, Ear, Eye, Nose, and Throat system (HEENT), (c) assessing the lungs, (d) developing differential diagnoses, and (e) presenting patient information to preceptors. The students rated their confidence levels using a 5-point Likert scale with "1" being not confident, "2" somewhat confident, "3" neither, "4" somewhat confident, and "5" confident. Content validity of the ICSs was established with an expert panel of clinicians and educators with more than 10 years of experience.

Data Analysis

Statistical analyses were conducted using Windows version 23 of the Statistical Packages for Social Science (SPSS) (IBM Corp, 2016). Frequencies were used to describe the categorical variables (not confident, somewhat confident, neither, somewhat confident, and confident) for the following categories: collecting a focused health history, assessing HEENT system, assessing the lungs, developing differential diagnoses, and presenting patient information to the preceptor. Binomial Sign Test was used to test for differences between the pretest and posttest scores for each of the categories. Because the purpose of the pilot study was to describe an educational project, a power analysis is not warranted.

Results

Pretest

Twenty-eight students responded to the pretest survey (70% response rate), and 15 students responded to the posttest survey (54% response rate). According to the responses from the pretest, students were least confident in presenting a patient to the preceptor (21% not confident) and assessing the HEENT System (10% not confident). Students were most confident in assessing the lungs (41%).

Posttest

The posttest survey results indicated that students' confidence levels improved in all five areas (collecting a focused health history, assessing the HEENT

system, assessing the lungs, developing differential diagnoses, and presenting patient information to the preceptor) after the ICS program. The greatest area of improvement was presenting a patient to the preceptor (52%). The posttest survey also indicated there were no areas in which the students were not confident. All areas (collecting a focused health history, p = .010; HEENT system, p = .001; assessing the lungs, p = .001; developing differential diagnoses, p = .001; and presenting patient information to the preceptor, p = .001) demonstrated a significant increase between the pre- and posttest scores.

Discussion

Student confidence is important as they begin their clinical experiences (Barnes, 2015). Our study provides evidence that including ICSs prior to FNP students' first clinical experiences boosts confidence. Findings suggest that ICSs increase FNP students' confidence in collecting health histories, assessing the HEENT system, assessing the lungs, developing differential diagnoses, and presenting patient information to preceptors. These findings are important to nursing education as they provide a methodology for potentially increasing students' clinical decision making and ability to convey patient information to the clinical preceptor before they enter into clinical practice.

According to the Nursing Education Simulation Framework, learning, self-confidence, and critical thinking skills can improve with guided interaction between students and faculty (March, Adams, & Robinson, 2014). The literature suggests that ICSs and various simulation activities improve clinical decision making, assessment skills, and student confidence (Colella & Beery, 2014; Pittman, 2012; Smith & Roehrs, 2009; Winkelman et al., 2012). Our study builds upon the literature that ICS, integrated with role-playing, improves student confidence for decision-making skills and presenting patient information to the clinical preceptor.

Limitations

We collected information at only two points in time, which is one limitation of this study. Future studies should consider assessing student confidence throughout a course or perhaps an entire degree program. Additionally, we did not request demographic information from the participants. March et al. (2014) found that confidence and learning perception vary by race/ethnicity. Therefore, demographics may have revealed some interesting variances. Future studies should consider exploring the differences between confidence levels and race/ethnicity or gender. Our study was conducted during scheduled face-to-face sessions during a weeklong campus intensive. With the increase in online courses of study, we recommend for future research to study asynchronous and synchronous online formats for ICS. Although the sample size of this project was small, Hertzog (2008) suggests a sample size ranging from 10 to 30 is adequate for testing the feasibility of a project. Also, another limitation is while 28 students completed the pretest, only 15 students completed the posttest. However, this yielded a 54% response rate. A future larger powered study is needed to see if results are generalizable. Despite these limitations, our results demonstrate that using ICS holds promise for improving FNP students' confidence prior to their first clinical rotations.

Conclusions

The ability to adequately and succinctly report patient information is an essential skill for FNP students. Our study found that using ICS is feasible for improving student confidence. Similarly, the study found that using ICS in FNP training improved students' confidence. This will likely translate into not only better learning outcomes for students but also better patient outcomes.

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