Evaluation of DNP Students' Competencies in an Online Informatics Course

Barbara Kupferschmid, PhD, RN; Connie Creech, EdD, RN, ANP-BC; Marilyn Filter, PhD, MS, RN, CNM; and ChristinaAplin-Kalisz, DNP, MSN, FNP-BC

Problem Statement: Creation of the Health Information Technology for Economic and Clinical Health (HITECH) Act promoted the utilization and meaningful use (MU) of qualified electronic health records (EHR). As EHRs are adopted by healthcare providers, there is an increasing amount of clinical data available for analysis. However, the level of educational and clinical preparation necessary for Doctor of Nursing Practice (DNP) students to be competent to fully utilize this technology and data needs further exploration. The aim of this study was to evaluate students' prior informatics experience and their ability to master competencies in an Informatics course in an online DNP program. Students in this program have different educational and clinical backgrounds. **Methods:** This study utilized a retrospective descriptive design using a convenience sample of students enrolled in an Informatics course. Data were collected on students' informatics experience and demographic characteristics, including highest degree obtained. Students completed competencies focused on informatics skills and application and analysis of informatics concepts. Based on competency scores, students were assigned a value of 1 (mastered), 2 (competent), or 3 (did not master). Students' demographic characteristics in relation to prior informatics experience and competency mastery were compared using Chi-Square or Fisher Exact Tests. P-values less than 0.05 were declared statistically significant. The Institutional review board designated the study as exempt. **Results:** The highest degrees held by students were BSN (n=39) or MSN (n=11); 82.4% were female and 17.6% were male. Ten students were nurse practitioners and one was a clinical nurse leader. While analysis revealed more students with a MSN degree (64%) had prior informatics experience compared to those with a BSN (42%), the results were not statistically significant. To assess students' ability to acquire informatics skills, students were evaluated in relation to the mastery of competencies focused on (A) data entry, data analysis, and display of results and (B) exploration of public health databases. A greater percentage of students with a BSN (92.3%) in comparison to students with a MSN (63.6%) mastered competency A (p=.049; Cramer's V = .345). The Cramer's V indicated a medium association between degree obtained and competency mastery. While a higher number of students with a BSN (92% vs. 82%) mastered competency B, the test was not statistically significant. To assess students' ability to apply and analyze informatics concepts, students were evaluated in relation to mastery of competencies focused on (C) application of internet resources to the learning needs of a vulnerable patient and (D) analysis of the challenges related to achieving MU objectives. Although the tests were not statistically significant, a greater percentage of students with a MSN mastered competencies C and D in comparison to students with a BSN (C - 64%, 59%; D - 100%, 74%, respectively). **Significance:** In competencies focused on mastery of informatics skills, students with a BSN performed better than students with a MSN. In competencies focused on analysis and application of informatics concepts, students with a MSN performed better. Therefore, informatics course content should reflect the variation in students' educational and clinical backgrounds.