Informatics Assignment for Graduate Nursing Practice Study

In the earliest learning about quality improvement through evidence-based practice (EBP), students are taught to create measurable clinical questions using the PICOT format (i.e., Population, Intervention, Comparison, Outcome, and Timeframe) (Fineout-Overholt, Melnyk, & Schultz, 2005). An emphasis of EBP and outcomes management is highlighted in the Institute of Medicine’s (2003) goals for educating health professionals. The Essentials documents published by the American Association of Colleges of Nursing for Baccalaureate (AACN, 2008), Master’s (AACN, 2011), and Doctor of Nursing Practice (DNP; AACN, 2006) education emphasize that nurses should understand informatics at all levels of educational preparation. With the implementation of the DNP Essentials in DNP programming, a need for development of a different level of knowledge and data management exists. Doctoral education in research often prescribes prospective data collection to answer research questions. Current doctoral education based in research does not typically include skill building in retrospective methods of data collection. Using retrospective data collection is more common in practice settings engaged in quality and safety improvement. Therefore, a new method of teaching how to use informatics for knowledge and data management and, specifically, how to set up retrospective data collection (an essential skill) for advanced nursing practice is introduced early to DNP students for use in quality and safety improvement initiatives.

The goal of this assignment is to use information technologies to manage knowledge and information for scholarly advanced nursing practice. The outcomes for this learning activity are for the students to define a selected term based on health care values, locate measures that pertain to the definition’s concepts, create a sample search strategy to locate a population of interest, and refine a list of data to be collected.

Description of Activity

The informatics assignment has four parts to guide students through using informatics for quality improvement activities. First, the student creates a literature search for the term (favorite ones are the six aims of the Institute of Medicine, specifically, effective or efficient care delivery) and defines the term from the extant literature using a few sentences. Then the references found from the literature search are assigned a level of evidence from the two pyramids in the article by Fineout-Overholt et al. (2005) and references in American Psychological Association format are created. Second, the student searches for measures of the concept located among the extant measure databases available at the Agency of Healthcare Research and Quality (http://qualitymeasures.ahrq.gov/) and Hospital Compare (http://www.hospitalcompare.hhs.gov) Web sites. The measures are presented in a bulleted format, with the definitions of the numerator and denominator. Validity is discussed as to the ability to measure the concept as they have defined it, retaining some measures and rejecting others. Third, the student creates a sample search strategy to locate a population of interest using International Classification of Diseases, 9th edition (ICD-9, 2014) and procedure codes. The code definitions are reviewed and included in the strategy to search for the population of interest. Finally, a further refinement of a data list to answer the measure’s question implied in the numerator and denominator definitions is compiled for use in practice to answer the original question about effective or efficient care delivery. The activity is written as instructions to the quality improvement analyst to find the pertinent cases in the electronic or paper medical records; and an Excel® database with the refined list of data is created. Students are provided iterative formative feedback by their faculty to meet the outcomes for the learning activity.

This learning activity is designed for postbaccalaureate and post-master’s students in the DNP program. All sections of this assignment are steps in the process for retrospective population comparison–type DNP projects. The activity’s format can be used in live in-class, online forum, and webinar formats. It can also be scaled for large, as well as small, group use, either as teams or individuals. In addition, the assignment can be altered for students conducting clinical research. Faculty find that the assignment is simple to implement in all educational settings.

Student responses are collected in a short reflection assignment to show that all students are meeting the learning outcomes for the activity. The post-master’s students reported using ICD-9 and procedure codes for billing previously, the postbaccalaureate students reported that they are just learning about the codes for billing, and both cohorts indicated that they are surprised and pleased with the utility of this method for quality improvement. Student DNP projects vary greatly. Examples include using the informatics method to compare access to care or guideline use (defined concepts) between rural and urban populations (comparator groups) with diabetes and heart failure (ICD-9 codes), finding a population from the general medical–surgical population in an agency (numerator and denominator definitions), collecting data on the defined concept (using the Excel spreadsheet), analyzing the data and method, and reporting the findings.

References

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