Introducing a New Competency Into Nursing Practice

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As science advances, new competencies must be integrated into nursing practice to ensure the provision of safe, responsible, and accountable care. This article utilizes a model for integrating a new complex competency into nursing practice, using genomics as the exemplar competency. Nurses working at 23 Magnet® Recognition Program hospitals participated in a 1-year new competency integration effort. The aim of the study was to evaluate nursing workforce attitudes, receptivity, confidence, competency, knowledge, and practices regarding genomics. Results were analyzed using descriptive statistical techniques. Respondents were 7,798 licensed registered nurses. The majority (89%) said it was very or somewhat important for nurses to become more educated in the genetics of common diseases. Overall, the respondents felt genomics was important, but a genomic nursing competency deficit affecting all nurses regardless of academic preparation or role was observed. The study findings provide essential information to help guide the integration of a new competency into nursing practice.

With scientific advances, new competencies must be integrated into nursing practice to ensure the provision of safe, responsible, accountable care. Frequently, such integration requires a large scale effort because of the profession's size and diversity: more than 3.2 million licensed nurses, of which 2.9 million are actively practicing (Health Resources and Services Administration [HRSA], 2010). As new concepts become associated with nursing practice, new competencies evolve as a result of research, education, and praxis. The primary aim of this research project is to improve the capacity of institutions to integrate a competency into nursing health care delivery. A detailed understanding of the beliefs, knowledge, and practices of a diverse population of nurses is essential to planning interventions associated with introducing a new competency. In this study, genomics was selected as the exemplar competency for integration evaluation. Genomics is an established core competency for all registered nurses (RNs) regardless of academic preparation, clinical role, or specialty (Consensus Panel on Genetic/Genomic Nursing Competencies, 2009). Personalizing health care through the use of genomics is associated with improving patient quality, safety, and health outcomes, all priorities for nursing regulation.

Genomics represents an especially complex competency to diffuse. Competency hinges on knowledge of the innovation, yet the majority of health care providers and faculty have limited or no educational background in genomics (Calzone, Jenkins, Culp, Bonham, & Badzek, 2013; Haga, Burke, Ginsburg, Mills, & Agans, 2012; Jenkins & Calzone, 2012; Skirton, O'Connor, & Humphreys, 2012). This limitation directly influences the ability of health care workers to comprehend the relative advantage in health care quality, safety, and outcomes offered by genomics and the relevance to their practice. Furthermore, genomics' compatibility with existing values and experiences can be influenced by misperceptions, such as genetic determinism, fear of misuse, or the misperception that genomic applications are limited to single gene disorders that impact small numbers of patients cared for by genomic specialists (Korf, 2012). Additionally, many genomic applications, such as selecting medications and dosages and avoiding adverse drug events, are unrecognized (Manolio et al., 2013).

Genomics is the study of how genetic variation impacts health and includes risk identification, disease screening, prevention, diagnosis, prognostics, and therapeutic decision making (Green, Guyer; National Human Genome Research Institute, 2011). The improvement in health outcomes as a result of genomic information can be seen with diseases for which the adoption of genomics has been translated into practice. For example, predisposition genetic testing, tumor profiling, targeted therapies, and pharmacogenomics are personalizing care for cancer patients while improving quality, safety, and outcomes (McDermott, Downing, & Stratton, 2011). Genomic discoveries that provide evidence of clinical utility continue to emerge for all health conditions, including common complex ones (Korf & Rehm, 2013). This broad application of genomics challenges the health care community to be knowledgeable about genomics, a science in which most providers have limited competency.

Theoretical Framework

Several theoretical frameworks can be used to study the integration of a complex competency into practice. The theoretical framework chosen to guide this project was Rogers' Diffusion of Innovations (DOI) (Rogers, 2003). Genomics, as a new complex competency, meets the definition of an innovation according to DOI because it represents an idea, practice, or object with the perception of newness (Calzone et al., 2012). Though genomics is not new, Rogers (2003) argues that newness is also a function of knowledge, persuasion, or adoption.

The major stages of DOI include knowledge; persuasion consisting of the advantage, compatibility, complexity, trialability, and observability of the innovation; adoption decision; implementation; and confirmation. Rates of innovation adoption are influenced by several factors, including communication channels used for dissemination; time; and the social system consisting of the health care community in which the competency is being introduced. Individual adopter characteristics, including individual innovativeness, prior experience with the innovation, perceived need, and normative values of the social system, also influence adoption rates.

The framework for nursing genomic competencies is well established (Consensus Panel on Genetic/Genomic Nursing Competencies, 2009; Greco, Tinley, & Seibert, 2012). Given the complexity of genomics, dissemination of a large-scale competency integration effort must be informed by evidence regarding the aspects that influence diffusion and can inform intervention efforts.

Materials and Methods

This longitudinal study provided a cross-sectional analysis of baseline data from RNs employed at 23 American Nurses Credentialing Center designated Magnet® Recognition Program hospitals. The institutions were in 17 states, representing all regions of the United States and included one rural, three children's, one Veterans Administration, and one psychiatric hospital as well as one cancer center. The number of RNs employed per institution ranged from 80 to 3,000 at the time of the baseline survey.

The survey was administered at each institution between July and October 2012 and was open for completion at each institution for 28 total days. Each institution had a minimum recruitment strategy of using e-mail notification of survey availability at baseline and sending periodic reminders. Institutions could implement additional strategies to increase survey response; strategies were varied and included offering incentives (with local institutional review board [IRB] approval), walking rounds, advertising, supervisor encouragement, and intranet postings. All participating hospitals reported similar survey burden challenges, with 100% reporting having conducted an institution-wide nursing survey in the past 6 months.

Survey on Competency Integration

The baseline data were obtained as part of a research project designed to establish and assess the outcomes of a year-long intervention to improve the capacity to integrate a new competency, genomics, into nursing practice. The aim of the baseline assessment was to evaluate institutional nursing workforce attitudes, receptivity, confidence, competency, knowledge, and practices regarding genomics.

Eligibility

Eligibility criteria for survey participation included being an RN actively employed by a participating institution at the time of survey administration. RNs from all levels of academic preparation and roles were eligible. Non-RNs were excluded.

Regulatory Approval

The West Virginia University (WVU) IRB reviewed and approved the study. The National Institutes of Health (NIH) Office of Human Subjects Research established a reliance agreement between the WVU IRB and the NIH for the project. Additional institution-specific regulatory requirements varied. Some institutions agreed to rely on the WVU-IRB approval because the local IRB considered the study exempt from the Code of Federal Regulations (45 CFR 46) given the anonymous nature of the survey collection and minimal risk. However, some institutions needed institutional IRB review.

Instrument

The instrument utilized for this study, the Genetic/Genomic Nursing Practice Survey (GGNPS), measures constructs from Rogers DOI (Rogers, 2003). The GGNPS assesses attitudes, receptivity, the nursing practice social system, confidence, competency/knowledge, and decision/adoption of genomics as well as routine demographics. Instrument validation was performed using structural equation modeling, which found the instrument items aligned well with the DOI domains (Jenkins, Woolford, Stevens, Kahn, & McBride, 2010). Instrument item format included multiple-choice, dichotomous yes/no, and Likert-scale questions on the genomics of common diseases and family history. The instrument, which was administered online, is open access and available at http://onlinelibrary.wiley.com/doi/10.1111/j.1547-5069.2012.01475.x/suppinfo. The focus on the genomics of common diseases and family history applies to the practice of all nurses regardless of setting or role and avoids the disparities associated with access or cost of genomic technologies.

To assess the use of race in clinical practice, the Genetic Variation Knowledge Assessment Index (GKAI) and the Racial Attributes in Clinical Evaluation scales were used (Bonham, Sellers, & Woolford, 2013). Two questions from the GKAI are reported in this article; the rest of the data from these instruments will be reported separately.