Deliberate practice and nurse competence

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ABSTRACT

Background: Increasing demand for accountability in health care requires that we understand how nurses continually increase their expertise. Development of expertise has been linked to deliberate practice in many domains but little is known about how deliberate practice impacts the expertise of registered nurses.

Objectives: Evaluate the relationships among experience, education, deliberate practice, and competence as an empirical referent of expertise, and to identify which of the independent variables makes the highest contribution to competence.

Methods: Cross-sectional, descriptive, correlational study design was used. A purposive sample of RNs from one large, Midwestern teaching hospital was surveyed.

Results: After taking into consideration demographic variables, education and experience, deliberate practice made the greatest contribution to competence. No significant relationship was found between years of experience or education and competence.

Conclusion: This study provides empirical evidence for the relationship of deliberate practice to competence, a promising concept for explaining the development of skill acquisition in nursing.

1. Methods

1.1. Study design, sampling and setting

A cross-sectional, descriptive, correlational design was used. A purposive sample of only registered nurses (RN) working in adult

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intensive care units (ICU) was obtained. Minimum sample size for this analysis was estimated (G*Power 3.1 51) for a power of 0.80, and a small effect size of 0.20 was 42 for a model with 4 predictor variables.

1.2. Measures

Demographic information was collected including race, gender, age, years of experience as an RN, and highest education level in nursing. The Deliberate Practice in Nursing Questionnaire (DPNQ) was used to collect information about activities that nurses engage in to improve their performance. The 24-item questionnaire has six subcategories: continuing formal education, continuing professional education, self-regulated learning/self-development, precepting, specialty certification, and professional organization membership, from which a composite score is derived with a total possible score of 96. A composite score is calculated for all items based on a standardized mathematical methodology (Bathish et al., 2016). Content validity of this instrument was based on a comprehensive literature review and a five panel expert review. Cronbach’s alpha coefficient of the DPNQ in the present study was 0.660 (standardized, 0.703) Items, scoring and reliability and validity characteristics have been reported (Bathish et al., 2016). Additionally, the Nurse Competence Scale (NCS) was used as the empirical referent of nursing expertise (Meretoja, Isoaho, & Leino-Kilpi, 2004). Permission for the use of this instrument was obtained from both the research developer, Dr. Riitta Meretoja (affiliated with Hospital District of Helsinki and Uusimaa, Finland) and from the copyright holder (Wiley-Blackwell). The NCS has 73 items inclusive of seven categories.

1.3. Data collection and analysis

Institutional review board approval was obtained prior to initiating the study. Qualtrics® survey software was used to deliver the study questionnaire electronically through confidential email. Data were analyzed using SPSS Version 21. Spearman rank order correlation coefficients were calculated to analyze relationships between experience and deliberate practice and nurse competence. The Mann-Whitney U test was used to examine the relationship between education and nurse competence. Independent samples t-tests examined relationships between education and deliberate practice. A theoretical hierarchical multiple regression analysis assessed the effect of gender, experience, education and deliberate practice on the self-reported nurse competence scale. Statistical significance was set at p < .05.

2. Results

A total of 92 electronic questionnaires were completed with an overall response rate of 41%. Eleven questionnaires were rejected for major missing data (>25%), giving the final sample of 81 questionnaires analyzed. The sample characteristics have been reported (Bathish et al., 2016) and were a majority of white race between ages 23 and 61 years working full time (33–48 h/week). Half the sample was female (54%). Years of experience as an RN ranged from 1 to 37 years with an average of 11 years working in critical care. Sixty-three percent of the sample had a bachelor’s degree in nursing.

NCS scores ranged from 52 to 100 (M = 85.15, SD = 10.83) out of a possible score of 100. A majority (79%) of the nurses surveyed reported themselves in the Excellent (75–100) competence category on the NCS. Nurses considered themselves most competent in the Diagnostic Functions category (M = 87.67, SD = 11.01) and least competent in the Teaching/Coaching role (M = 81.17, SD = 14.63). Scores in the other categories were as follows: Ensuring Quality (M = 81.62, SD = 13.52), Therapeutic Interventions (M = 86.07, SD = 12.05), Helping Role (M = 86.34, SD = 9.22), Work Role (M = 86.60, SD = 11.63), and Managing Situations (M = 87.25, SD = 11.22).

DPNQ scores ranged from 9 to 60 (M = 28.79, SD = 8.59) out of a possible score of 96. Scores for subcategories of the DPNQ were: Continuing Formal Education (M = 0.93, SD = 1.26); Continuing Professional Education (M = 11.17, SD = 5.67); Self-Regulated Learning/Self-Development (M = 10.66, SD = 3.14); Precepting (M = 3.55, SD = 2.28); Specialty Certification (M = 1.55, SD = 1.08); Professional Organization Membership (M = 0.85, SD = 0.99). Over half (n = 49, 53%) of the nurses were not enrolled in any formal education classes or had not taken any formal education classes since becoming an RN. A little more than two-thirds (n = 60, 65%) held at least one to three specialty certifications. A little under half (n = 41, 44.6%) had no professional organization memberships, and roughly one-third (n = 33, 35.9%) of the sample had one membership. A majority (n = 64, 70%) of participants reported attending programs or conferences lasting a full eight – hour day and held within their workplace. Almost half (n = 42, 47%) had precepted on their current unit and a previous unit of work and only 8% (n = 7) had never precepted.

2.1. Predictors of competence

2.1.1. Experience and competence

No significant correlation was found between years of experience and the total NCS score (rs = 0.131, p = .245). There were significant positive correlations for experience with two of the seven nurse competence categories: Managing Situations (rs = 0.243, p < .029) and Work Role (rs = 0.268, p < .014). These correlations are weak and positive indicating that more years of experience practicing as an RN is associated with higher self-report competence in managing situations and work role competencies.

2.1.2. Education and competence

No significant difference was found in overall nurse competence scores of those with a bachelor’s degree in nursing (BSN) or higher (Md = 86.47, n = 53) and those without a BSN (Md = 90.71, n = 27), U = 526, z = −1.92, p = .054, r = .21. Both groups reported competence in the Excellent category.

2.1.3. Experience and deliberate practice

No significant relationship was found between total years of nursing experience and deliberate practice (r = 0.09, p = .403). There were significant negative associations found for the deliberate practice subcategories of Certification (r = −0.298, p < .01) and Self-Regulated Learning/Self-Development (r = 0.243, p < .05). A significant positive correlation was found between experience and Precepting (r = 0.507, p < .001).

2.1.4. Education and deliberate practice

No significant difference in scores was found for those nurses with a BSN or higher in nursing (M = 29.13, SD = 9.22) as compared to those with less than a BSN in nursing (M = 28.07, SD = 7.16); t(89) = 0.546,
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