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Nurses' decision making in heart failure management based on heart failure certification status

Nancy M. Albert, PhD, CCNS, CHFN, CCRN, NE-BC, FAHA, FHFSA, FAAN [a,*], James F. Bena, MS [b], Denise Buxbaum, BSN, RN, CHFN [c], Linda Martensen, MA [d], Shannon L. Morrison, MS [b], Marilyn A. Prasun, PhD, CCNS, CHFN, CNL, FAHA [e], Kelly D. Stamp, PhD, ANP-C, RN, CHFN-K, FAHA [f]

[a] *Office of Nursing Research and Innovation and the George M. and Linda H. Kaufman Center for Heart Failure, Cleveland Clinic, 9500 Euclid Avenue, Mail code J3-4, Cleveland OH, 44195, USA*
[b] *Quantitative Health Sciences, Cleveland Clinic, 9500 Euclid Avenue, Cleveland, OH 44195, USA*
[c] *Heart & Vascular Center, Essentia Health, Duluth, MN, USA*
[d] *Emeritus, Spring Lake Heights Board of Education, Spring Lake Heights, NJ, USA*
[e] *Heart Failure Disease Management Program, Memorial Medical Center, University of Illinois Chicago, Springfield, IL, USA*
[f] *Family & Community Nursing Department, University of North Carolina at Greensboro, Greensboro, NC, USA*

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ABSTRACT

Background: Research findings on the value of nurse certification were based on subjective perceptions or biased by correlations of certification status and global clinical factors. In heart failure, the value of certification is unknown.
Objectives: Examine the value of certification based nurses' decision-making.
Methods: Cross-sectional study of nurses who completed heart failure clinical vignettes that reflected decision-making in clinical heart failure scenarios. Statistical tests included multivariable linear, logistic and proportional odds logistic regression models.
Results: Of nurses (N = 605), 29.1% were heart failure certified, 35.0% were certified in another specialty/job role and 35.9% were not certified. In multivariable modeling, nurses certified in heart failure (versus not heart failure certified) had higher clinical vignette scores ($p = 0.002$), reflecting higher evidence-based decision making; nurses with another specialty/role certification (versus no certification) did not ($p = 0.62$).
Conclusions: Heart failure certification, but not in other specialty/job roles was associated with decisions that reflected delivery of high-quality care.

Introduction

Certification credentialing formally recognizes nurses' clinical knowledge, clinical experience in a specific specialty or job role, and clinical judgment.[1] When certified nurses hold an externally validated qualification, they are assumed to be more competent. Further, symbolization of certification on work badges allows the public to identify nurse competence.[2] The value of certification was enhanced when states defined advanced practice nurses' scope of practice by education preparation and certification status,[3] and when the American Nurse Credentialing Center Magnet®-recognition program requested applicant organizations to meet targeted goals for certification and identify certifications held by their nursing staff.[4] However, the true value of specialty/job role certification is unclear.

Multiple papers assessed the value of certification using the Perceived Value of Certification Tool, a subjective survey of the intrinsic and extrinsic value of certification as well as barriers and benefits.[5–8] In one report, 61% of the variance in value statement scores were

Abbreviations: AAHFN, American Association of Heart Failure Nurses; CHFN, certified heart failure nurse; HF, heart failure.

Conflicts of interest: All nurse authors are volunteers for the American Association of Heart Failure Nurses (AAHFN). Dr Nancy Albert is Past Chair of the AAHFN Certification Board, M. Prasun is Past President of AAHFN and K. Stamp serves on the Executive Board as President-Elect. Relationships with AAHFN did not inappropriately influence this research as there was no communication with AAHFN during the conduct of research.

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Submission Declaration

The work described has not been published previously (except as a lecture [no electronic print]) and is not under consideration for publication elsewhere. The final version of the manuscript was approved by all authors before submission.

Authorship

All authors made substantial contributions to the following: (1) conception and design of the study (all but SM), acquisition of data (all but JB and SM), analysis (JB, SM, NMA) and interpretation of data (all authors), drafting the manuscript (NMA) and revising it critically for important intellectual content (all authors).

* Corresponding author. Fax: 216-445-1776.
E-mail address: albertn@ccf.org (N.M. Albert).

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based on 3 factors: personal value of certification by nurses, recognition by others and professional commitment,[5] reflecting that value was related more to intrinsic perceptions. Since research results were based on statements that reflected subjective perceptions, it was difficult for investigators to truly determine value. Nurses with one or more certifications may believe they are more competent or that they produce better patient outcomes than colleagues without certification, and certainly, they may have higher self-confidence in their professional ability,[9] but rationale for being certified is not based on competence alone. When perceived value survey scores were compared between nurses in non-Magnet and Magnet-designated facilities, there were no differences in intrinsic and extrinsic certification value perceptions, even though certified nurses had higher intrinsic value perceptions of certification.[10] Further, in many reports, researchers failed to control for factors that differed by certified and non-certified nurses, such as highest nursing degree and number of years of nursing experience, both of which could influence competence.

Some authors used hospital databases of patient satisfaction and quality metrics to examine associations between nurses' certification status and clinical outcomes[11–13] or adherence to national guidelines.[14] In perioperative units, higher certification rate was associated with higher rates of hospital acquired pressure injury,[11] in intensive care units, certification was associated with fewer fall events but not with medication administration errors, skin breakdown or hospital acquired infections,[13] and among hospital nurses from multiple units, certification was not associated with failure to rescue.[12] Although authors reported some outcomes that represented the value of certification, there were limitations to findings, including the influence of nurse characteristics (for example, highest nursing degree/education level and experience level), work factors (hours worked), and factors external to nurses and patients, such as other healthcare providers and leadership support for optimal quality metric outcomes. Finally, in a literature review of the impact of nurse certification, quantitative evidence that supported an association between certification and patient satisfaction and outcomes was limited.[15] Ultimately, it has been difficult to objectively validate the value of certification, since a randomized controlled study methodology is not feasible.

In heart failure (HF), there were no reports in the literature on the value of certified HF nurse (CHFN) status. Managing HF is costly and burdensome due to high hospitalization and mortality rates,[16] but national recommendations are available to nurses to guide clinical decision-making known to optimize clinical outcomes.[17,18] The CHFN examination was developed through a rigorous process of psychometric testing by clinical and academic HF experts, based on national management guidelines and psychometrician recommendations. Leaders of the organization that supports the CHFN program hypothesized that certified nurses in HF were more likely than non-certified nurses to make clinical decisions based on national guidelines, especially related to 4 domains: chronic HF medication management, acute-care HF medication management, self-care education and evaluation of patients' adherence to self-care behaviors.

The purpose of the research study was to examine nurses' decision-making that reflected clinical performance/quality of delivery of nursing care, based on certification credential status. This study was guided by 1 primary research question: Does HF decision-making differ among nurses with HF certification versus without HF certification? There were 5 secondary research questions; the first 2 were: (a) Does HF decision-making differ among nurses with HF or any other specialty/job role certification versus no certification? And (b) Does decision making in HF differ among nurses with 1 or more non-HF specialty/job role certification versus no certification? Since CHFN status could be associated with nurse characteristics, work factors and professional factors, 3 other research questions were developed: After controlling for nurse characteristics, work factors and professional factors, does decision-making in HF by nurses without certification differ from nurses who were (a) certified in HF, (b) certified in HF or any other specialty/job role, and (c) certified in a non-HF specialty/job role? The term specialty/job role certification, which is used throughout this paper, refers to certification in a specialty area (for example, critical care, progressive care, telemetry, and pediatrics) or certification in a job role (for example, advanced practice, case management, and leadership).

Methods

This research study used a cross-sectional, descriptive design. The study was approved by the principal investigator's hospital Institutional Review Board. Potential participants read a research information sheet before deciding to participate. Clinical vignettes were used to examine nurses' decision-making.

Setting and sample

Since the research was conducted via an on-line survey, nurses in the United States and Canada could participate. Participants were an anonymous convenience sample of nurse members of the American Association of Heart Failure Nurses (AAHFN) and nurses from 2 Midwest (Illinois and Ohio) and 1 Northeast (Washington District of Columbia) hospital in the United States. Inclusion criteria were that nurses provided direct clinical care in HF in any environment of care or provided patient-related HF services, such as education, quality monitoring, case management, research and other functions that required direct patient interaction. There were two potential exclusion criteria: not having clinical contact with patients or not having clinical decision-making in HF; for example, administrative work, academic work outside of a clinical setting or company representative.

Clinical vignettes and other survey items

Clinical vignettes were used to examine nursing judgments and decision-making processes. Each vignette was developed based on the 2013 American Heart Association/ American College of Cardiology HF management guidelines[17] and consisted of a scenario about a fictional patient with HF. Subjective and objective data were provided that included laboratory, hemodynamic and physical examination findings. Medication history was included when applicable. A question was posed and participants chose the best response from multiple choice response options. The clinical vignette methodology was selected to examine nurses' decision-making in HF clinical performance and quality of delivery of nursing care since vignettes disentangle multiple predictors of clinician behavior; they minimize threats of internal validity seen with experiments and threats to external validity seen with survey research.[19] When clinical vignettes are well designed to test specific questions, they can be highly generalizable to real-life behavior, and they overcome ethical, practical and scientific limitations that occur with observation, perception surveys, standardized patients and analyses of retrospective data.[19]

In total, 7 clinical vignettes were used. They involved 4 domains important to nurses' decision-making and clinical management of HF: 2 on chronic- and 1 on acute-care medication management, 2 on self-care education and 2 on evaluation of self-care adherence. Originally, 12 vignettes were created by investigators. After investigators refined vignette content, they were reviewed by an education expert and content validity assessment was performed