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Developing the Clinical Nurse Leader Survey Instrument

A Modified Delphi Study

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Clinical nurse leader (CNL)-integrated care delivery is an emerging nursing model, with growing adoption in diverse health systems. To generate a robust evidence base for this promising nursing model, it is necessary to measure CNL practice to explicitly link it to observed quality and safety outcome improvements. This study used a modified Delphi approach with an expert CNL panel to develop and test the face, content, and construct validity of the CNL Practice Survey instrument. **Key words:** *clinical nurse leader, clinical nurse leader care delivery, Delphi method, instrument development, nursing*

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CLINICAL NURSE LEADER (CNL)-integrated care delivery is a relatively new nursing care delivery model that began in

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2007 with the publication of the *White Paper on the Education and Role of the Clinical Nurse Leader* by the American Association of Colleges of Nursing (AACN).¹ The CNL is a registered nurse (RN) with a master's level education and national-level certification in clinical leadership, care environment management, and clinical outcomes management. The CNL was designed to function at the microsystem level, applying CNL competencies in assessing unit-level structures and processes with the goal of improving them to better promote high-quality and safe patient care. CNL-integrated care delivery has been identified by the Institute of Medicine (now the Academy of Medicine),² the Agency for Healthcare Research and Quality,³ and the Robert Wood Johnson Foundation⁴ as an innovative strategy to improve care delivery. A recent study determined that CNL practice has a growing track record of adoption in health systems across the nation, with 58% of participating certified CNLs stating they are practicing in formally designated CNL roles across the nation.⁵ This impressive growth in CNL practice across the nation has occurred even though the evidence base demonstrating its effectiveness is still in the early stages of development.⁶ A literature review published in 2014 concluded that the existing CNL evidence base, while consistent in documenting positive trends in patient care quality and safety improvement, had significant methodological limitations.⁷ One reason for this was the lack of formal measurement of CNL practice, which limits the ability to explicitly link practice to quantified improvements in quality and safety outcomes.

To address this gap, a grounded theory analysis was conducted with existing CNL literature to clarify what CNL practice is and to guide the development of appropriate measurement tools.⁸ Through this analysis, the core phenomenon of CNL practice was conceptualized as continuous clinical leadership at the patient–health care interface. CNL continuous clinical leadership involves 5 core activities: supporting staff engagement, being a source of continuous communication

and information, strengthening interdisciplinary relationships, team creation, and shifting focus from person to process.⁹ The analysis also identified fundamental domains of preparation for CNL practice and the structures of CNL practice to create capacity for continuous clinical leadership practices by CNLs at the microsystem level (see Supplemental Digital Content, Figure 1, available at: <http://links.lww.com/JNCQ/A402>).¹⁰ Systematic preparation for CNL implementation includes acknowledgment of care delivery deficits, leadership support for the CNL to fill these gaps, and an effective change management strategy. The structures of CNL practice include care delivery redesign to embed a CNL-consistent, competency-based¹¹ workflow with accountability for quality and safety outcomes. Appropriately structured and consistent CNL practice is hypothesized to result in improved care environments and care quality outcomes that are facilitated by system acceptance through exposure to and understanding of CNL practice.

That study advanced understanding of what CNL practice is; it also provided a preliminary framework to develop measures of CNL practice that can be used in future research to quantify and link CNL practice with quality and safety outcomes. The purpose of this study was to use the preliminary framework as a basis for developing an instrument to measure CNL practice.

METHODS

Design

The study used a modified Delphi approach to achieve study aims. In general, the Delphi approach is defined as an iterative process designed to combine expert opinion into group consensus on a phenomenon of interest.¹² This study's Delphi used a 2-step approach, beginning with identification and/or elaboration of a set of concepts, followed by classification/taxonomy development.¹³ We consider our approach “modified” in that the majority of interactions with the expert

panel were not anonymous, although we did use anonymous questionnaires as well. Furthermore, we supplemented the Delphi approach with more traditional techniques of survey development and validation, including instrument pilot testing with a targeted sample. All appropriate institutional review board approvals were obtained before commencing study procedures.

Expert panel

The panel was chosen through a stakeholder-engaged, iterative process. Panel members were primarily connected through interactions at the yearly AACN CNL Summit, the premiere setting for knowledge dissemination about CNL education, research, and practice. The panel was selected to ensure there was representation from the multiprofessional CNL community and included practicing CNLs, CNL educators, CNL researchers and policy makers, and health system leaders with CNL initiatives in their practice settings.

Defining the concepts

The previously mentioned CNL practice framework was used as the basis for defining CNL practice and integrated care delivery. While this provided a good starting point for a conceptual definition of CNL practice, a stated limitation of the grounded theory research was that unpublished CNL case studies and narratives, which may have had unique trajectories and outcomes, were not included in the analysis. The expert panel's experiences and involvement with CNL education and practice, much of which was not published in the literature, provided an opportunity to produce a more comprehensive conceptualization of CNL practice.

The expert panel met via teleconference once or twice a month for a total of 9 months with the initial objective of working through and refining the original framework's concepts based on expert, multiprofessional discussion and consensus. For each meeting, 1 framework domain was discussed and

elaborated on. One panel member organized the meetings and recorded minutes throughout each meeting to document the discussion and consensus points, as well as topics of disagreement. In between teleconference meetings, the panel member revised the domain definitions based on focus group discussion. The refined domain definitions, along with the minutes of the meeting, were then sent out to the panel before the next meeting, which each panel member could edit and resubmit to the organizer, if desired. After further revision based on any edit requests, the domain definitions were again e-mailed for final consensus approval before the next teleconference and were also reviewed briefly as the first agenda item for each meeting.

After 9 months of this process, the panel was in consensus on a refined CNL model, in which the original domains underwent significant revision to better reflect a multiprofessional understanding of readiness (readying the environment for CNLs), structuring (defining a CNL competency-based workflow), practice (continuous clinical leadership), and expected outcomes (improved care environments and care quality outcomes). For example, the original component in the CNL practice domain of "shift the focus from person to process" was removed because of a lack of confirming evidence on which the panel could reach consensus. The pathway linking conceptual domains was clarified as well, with a direct path conceptualized from readiness, through structuring and practice, to outcomes. The underdeveloped "acceptance" domain in the preliminary framework was transformed into the domain "integration," representing both social and administrative integration of CNLs into the model of care. A pyramid depiction of the conceptual domains and relationships was selected (see Supplemental Digital Content, Figure 1, available at: <http://links.lww.com/JNCQ/A402>) to illustrate the important foundation provided by readiness and structuring, as well as the integrated nature of social and administrative integration across all conceptual domains.

Developing the instrument

With consensus on the concepts to be measured, the process moved to instrument development. The panel was in consensus that the instrument needed to contain a set of demographic items as well as items corresponding to the refined CNL Practice Model. The demographic items consisted of characteristics of the participant, work setting, and CNL initiative. The panel developed a set of response choices for each demographic item. CNL model item construction began by translating the conceptual domains and components defined in the refined CNL model into concrete statements/items serving as observable indicators of the latent variables. The response to each CNL model item was defined as a value from 0% to 100%, in terms of item's perceived "presence." All panel members were involved in item development. The process was iterative, with the results of meeting discussions, e-mails, and/or Delphi rounds being incorporated into the next iteration of the survey items.

Validity tests

For this study, we assessed the face, content, and preliminary construct validity of the instrument. Face validity comprises the qualities of an instrument that make it appropriate for its intended audience and includes readability, understandability, and clarity of the instrument items and/or response choices.¹⁴ Content validity is the degree to which instrument items are relevant to and comprehensive of the target construct for a particular assessment purpose.¹⁵ Construct validity is the extent to which the instrument actually measures the construct of interest.¹⁶

Face validity

Face validity was determined in 2 ways. Items were extensively revised throughout the study to make them clearer and readable, based on discussion, e-mails, and Delphi rounds. We also pilot tested the instrument with a sample of final-year CNL students, asking specific probing questions related to each item in terms of its clarity and comprehen-

siveness (see the "Pilot Test" section for more details).

Content validity

Survey items (both demographic and CNL model) went through 2 rounds of development and revision during meeting discussions and e-mail follow-up. The items then went through one formal Delphi round of questionnaire distribution to gauge relevance, appropriateness, and comprehensiveness through specific probing questions. For the demographic items, respondents reacted to the following statements: (1) the item represents a relevant CNL demographic (from not at all to completely); (2) the response choices for the item are appropriate (all, some, or none appropriate); and (3) the response choices are comprehensive in that all potential responses are listed (yes or no). For the CNL model items, respondents reacted to the following statements for each item: (1) the item is representative of the CNL practice domain and component listed (from not at all to completely); (2) the item is clearly understandable (yes or no); and (3) the items for [each particular] domain component are comprehensive (from not at all to completely). Respondents were also given the option of providing open-ended comments for each survey item.

The content validity index (CVI) was used to determine expert ratings of each item's relevance, appropriateness, and comprehensiveness. The CVI is the number of experts giving an item a "high" score, divided by the number of experts judging the item, which represents the proportion of experts in agreement about an item's relevance, appropriateness, and/or comprehensiveness related to the target construct.¹⁷ To account for potential agreement by chance, we compared the CVI obtained for each item with the Polit and colleagues¹⁷ calculated κ values (κ designating agreement based on relevance and not chance agreement of any type) to determine whether the CVI obtained with the number of experts has a strong κ score as well. For example, with 9 experts, 7 of which gave "high" relevance scores, the CVI is 0.78 and the κ is

0.76, which are considered excellent agreement. We considered a CVI score below 0.89 as the threshold for a serious review of the item in terms of need for revision and/or rejection. We also took all comments into consideration for the revision of items, no matter what the CVI score was. For example, an item could have scored high for relevance, but if 1 or 2 experts made comments on wording choice, that prompted a minor wording revision of the item.

Because the CVI was above the 0.89 threshold for the overwhelming majority of items, meaning there was significant agreement on the majority of item's relevance, appropriateness, and comprehensiveness, the Delphi process was not repeated. However, items were still extensively revised on the basis of the Delphi round comments. Instead of a Delphi, after each additional revision of items, panel members were e-mailed a form that contained the item language before it was revised, the item language after revision (if it was revised), and a space to mark agreement or not with the revision. A space for open-ended comment was also provided in each post-Delphi revision round. There was 1 post-Delphi round for both demographic and CNL model items, and 1 final round of revisions after the pilot test.

Pilot test

The survey, including demographic and CNL model items, was assembled as it would appear in the final instrument. The survey was then formatted for electronic administration. We then chose CNL students to pilot test the instrument. The literature suggests that pretest respondents be similar to the target audience but different enough so that if the survey is easily understandable to the respondents, then it should be "more than satisfactory" for the eventual target audience in terms of face validity.¹⁸ The students were in their final semester of their education program and thus would have enough knowledge about the CNL to understand the questions but were not involved in CNL initiatives, so would be able to detect "jargon" or implicit

assumptions within the items. The literature is consistent in suggesting between 20 and 30 participants for a pretest survey.^{19,20} Students were e-mailed a study information sheet along with a URL link to the survey. If students accessed the URL link, they were able to read the consent form, and if they decided to participate, they clicked on a link to begin the survey. Participation was anonymous.

Next, students reacted to the following statements for each item: (1) I understood this item (yes, no, had difficulty), and (2) the item responses were adequate (included appropriate response choices, did not include options I wanted to choose). Students also were given the option of providing open-ended comments for each survey item. The CVI was calculated for each item, with the same threshold (0.89) for reconsidering item revision. All open-ended comments were read and addressed no matter what the CVI score was for the item.

Construct validity

Construct validation employs probes to check for potential variation in interpretations of a construct of interest and then assesses and reports on the strengths and limitations of the finalized interpretive principles, that is, measures how much the items represent the latent constructs.²¹ Content validity is an important component of construct validity because it provides evidence about the degree to which the elements of the instrument are relevant to and representative of the targeted construct(s).¹⁵ The instrument developed in this study underwent numerous formal probing assessments and revision stages over the course of more than a year. The assessments were completed by respondents with multiple perspectives on CNL practice: CNL students, practicing CNLs, CNL educators, managers and executive leaders in health systems with CNLs, national-level CNL policy makers, and CNL researchers. CVI scores and panel unanimous consensus of final items were considered measurement of the preliminary construct validity of the instrument items.

RESULTS

There were no dropouts of panel members throughout the study. A total of 60 CNL students were made aware of the instrument pilot test, and 36 participated in the pilot test. The outcomes of each stage of the development and validation of the CNL Practice Survey are detailed in Supplemental Digital Content, Table 1 (available at: <http://links.lww.com/JNCQ/A403>), and described in the following sections.

Demographic items

The initial development of demographic items resulted in 41 items. In the Delphi round, the average CVI across all items was quite strong: 0.96 (SD = 0.06) for relevance, 0.94 (SD = 0.07) for appropriate/clear, and 0.92 (SD = 0.08) for comprehensive. The range of CVI for items was 0.67 to 1.0. CVI scores and comments resulted in 9 items being deleted, 3 items added, a revision of 44% of individual item's language, and a revision of 72% of individual item's response choices. The revised items were reviewed by the panel, and slight changes were made on the basis of feedback. The pilot test of the refined items showed similar average CVI statistics: 0.97 (SD = 0.03) for appropriate/clarity and 0.96 (SD = 0.04) for comprehensive. The CVI range for each item was 0.83 to 1.0. Responses resulted in the addition of 1 more item. The 36 demographic items were then approved as it is by the entire panel.

CNL Practice Model items

The initial development of CNL model items resulted in 74 items corresponding to the 14 components within 5 domains of the refined CNL model. In the Delphi round, the average CVI across all items was strong: 0.94 (SD = 0.07) for representativeness, 0.94 (SD = 0.07) for understandable, and 0.88 (SD = 0.00) for comprehensive. The range of CVI for items was 0.63 to 1.0. On the basis of CVI and 74 comments, 2 items were deleted, 4 items were added, and there was a revision of 84% of the individual item's lan-

guage. The revised items were reviewed by the panel, and slight changes were made on the basis of feedback. The pilot test of the refined items showed similar average CVI statistics: 0.97 (SD = 0.04) for understandability and 0.86 (SD = 0) for comprehensive. The CVI range for each item was 0.86 to 1.0. On the basis of CVI and 39 comments, 1 item was removed from the survey. The 73-item CNL Practice Survey was then approved by the entire panel.

DISCUSSION

In the existing CNL research literature, CNL practice has been measured as the presence of 1 or more CNLs in the cases described. In these reports, improved outcomes served as a proxy measure for sufficient and adequate CNL practice. The problem with this proxy methodology is that there is no way to explicitly link CNL practice with the outcomes. Without CNL measurement, the risk of bias in terms of other factors potentially being the source of the improvements is high from a methodological perspective. As a counterexample, for CNL evaluations where no improvement was found, without CNL measurement there is no way to determine whether the lack of outcomes is due to the ineffectiveness of CNL practice, is related to inconsistencies in CNL practice, or is perhaps due to contextual barriers prohibiting the manifestation of CNL practice.

The literature suggests that CNLs do in fact experience barriers limiting their practice: numerous qualitative studies that focused on CNL experiences articulate the difficulty CNLs have embedding their practice into their microsystems and feeling "overburdened" with non-CNL tasks and priorities.⁷ One recent study found that inconsistent CNL practice, that is, CNLs performing non-CNL role functions in addition to or as a replacement for CNL role functions, was associated with significantly lower participant scores of overall CNL success, suggesting that inconsistent practice leads to inconsistent outcomes.²² Another recent study examined the implementation of

the CNL role in a regional health system.²³ The case study illustrated how in some settings, a lack of appropriate CNL role structuring resulted in CNLs performing other nurse roles, such as staff nurse, charge nurse, and/or assistant manager roles *instead* of the CNL role as originally designed.²³ This was despite still being “called” a CNL in their settings, which resulted in confusion about what CNLs were “supposed to be doing.” The study found limited improvements in outcomes in these settings. If the proxy of quantitative outcomes was used in this study as a measure of CNL practice, then the implication would be that CNL practice in this study was not an effective intervention for improvement. But the deeper qualitative examination of what CNLs were expected to be doing every day showed limited opportunity for enactment of continuous clinical leadership, that is, lack of discernible CNL practice, which helps explain the lack of discernible outcomes. The CNL Practice Survey can serve as an efficient tool to obtain the same information as the qualitative methods did in the implementation study.

Poststudy CNL Practice Survey validation tests

This study was able to generate a CNL Practice Survey instrument that underwent rigorous face and content validity assessments. The preliminary construct validity was assessed through the probing and consensus process that occurred throughout the study, showing multiprofessional agreement that survey items adequately represented the concepts of interest. Since this study was completed, the survey has undergone additional construct validation testing, as part of a larger study validating the CNL Practice Model with a national sample of clinicians and administrators involved in diverse CNL initiatives.²⁴ As part of the model validation, Cronbach α coefficients were calculated to determine the survey instrument’s first (domain) and second-order (component) factor internal consistency and reliability. Confirmatory factor analysis (CFA) of survey responses was conducted to test

whether survey items were good measures of corresponding components and domains.

After initial analysis, the CNL Practice Model domain “integration,” which had lower-than-expected pathway coefficients, was reconceptualized as a new domain called “value,” which occurs after CNL practice has been implemented and outcomes achieved.²⁴ On the basis of this analysis, the model was respecified and reanalyzed (see Supplemental Digital Content, Figure 2, available at: <http://links.lww.com/JNCQ/A404>). The respecified domain survey items had the best CFA factor loading of all domains, validating this important change in the structure and measurement model. The respecified survey resulted in the loss of 4 items, for a total of 69 items. The Table indicates the content areas and the number of items for each of the model domains. The respecified survey items demonstrated excellent internal consistency reliability, with Cronbach α ranging from 0.73 to 0.96. The CFA showed acceptable-to-excellent fit of the 2-level measurement structure.²⁴ In a study using the survey instrument in a different sample, Cronbach α values ranged from 0.84 to 0.99, further demonstrating the excellent internal reliability of the instrument.²³ Future validity tests include a multisite criterion-related validity study, in which survey responses (the “to-be-tested” operationalization of CNL concepts) will be compared against a “higher-order operationalization” of CNL concepts, which will be generated via in-depth case studies of systems with CNL initiatives. Statistically significant and strong correlations between the survey and higher-order constructs will serve as evidence for concurrent criterion validity of the CNL Practice Survey instrument.

IMPLICATIONS AND CONCLUSION

The CNL Practice Survey currently has the necessary psychometric reliability and validity to be used in systematic research that aims to link the level of CNL practice to the level of outcomes achieved in prospective CNL studies. It measures the extent to which

Table. Final, Validated Survey Instrument^{a,b}

Model Domain	Domain Component	Number of Items
Readiness for CNL-integrated care delivery	Understanding care delivery gaps	4
	Consensus CNL practice can close gaps	4
	Organization-level implementation strategy	5
Structuring CNL-integrated care delivery	Microsystem-level structuring	5
	CNL competency structuring	11
	CNL workflow structuring	3
CNL Practice: Continuous clinical leadership	Facilitate effective ongoing communication	6
	Strengthen intra- and interprofessional relationships	4
	Create and sustain teams	4
	Support staff engagement	5
Outcomes of CNL-integrated care delivery	Improved care environments	7
	Improved care quality and safety	7
Value	CNL is perceived by clinicians and administrators as adding value to the way care is delivered	4

Abbreviation: CNL, clinical nurse leader.

^aThis comprises the respecified survey, in which 4 items were removed.

^bContact the authors for a copy of survey instrument.

CNLs are accountable for current AACN CNL competencies and the extent to which CNL continuous clinical leadership practices are enacted. The instrument also will allow for systematic identification and standardized comparison of CNL organizational readiness and structuring factors across diverse health systems adopting CNLs into their nursing models of care. These data will help better understand which organizational readiness and structuring factors are consistently associated with high levels of CNL practice and outcomes. This information can provide critical knowledge about what works and does not work, which can inform current and future CNL initiatives and potentially facilitate smooth adoption. The CNL Practice Survey can also conceivably be used by systems that already have CNL initiatives, or are planning them, as a helpful guide to

gauge the organization’s readiness for CNL practice and to structure the CNL role appropriately. The survey could also serve as a CNL self-evaluation tool, where CNLs compare the validated components of CNL practice with their own practice, helping them determine strengths and areas for future growth.

In conclusion, the CNL Practice Survey was developed and validated in this and other studies as a psychometrically valid instrument to measure CNL practice. The instrument development and validation were conducted with experts across the United States in CNL practice, education, research, and policy. The instrument can be used for rigorous research aiming to determine the effectiveness of CNL practice in improving quality and safety outcomes, which will strengthen the evidence base for this innovative nursing model of care.

REFERENCES

1. American Association of Colleges of Nursing. White paper on the education and role of the clinical nurse leader. <http://aacn.nche.edu/publications/whitepapers/clinicalnurseleader07.pdf>. Published 2007. Accessed January 5, 2017.
2. Institute of Medicine; Committee on the Robert Wood Johnson Foundation Initiative on the Future of Nursing. *The Future of Nursing: Leading Change, Advancing Health*. Washington, DC: National Academies Press; 2011.
3. Agency for Healthcare Research and Quality. Clinical nurse leader as quality champion: a dialogue about an effective nursing innovation. <https://innovations.ahrq.gov/events/2010/01/clinical-nurse-leader-quality-champion-dialogue-about-effective-nursing-innovation>. Published January 27, 2010. Accessed February 9, 2017.
4. Joynt J, Kimball B. *Innovative Care Delivery Models: Identifying New Models That Effectively Leverage Nurses*. Princeton, NJ: The Robert Wood Johnson Foundation; 2008.
5. Bender M, Williams M, Su W. Diffusion of a nurse-led healthcare innovation: describing certified clinical nurse leader integration into care delivery. *J Nurs Adm*. 2016;46(7/8):400-407.
6. Williams M, Bender M. Growing and sustaining the clinical nurse leader initiative. *J Nurs Adm*. 2015;45(11):540-543.
7. Bender M. The current evidence base for the clinical nurse leader: a narrative review of the literature. *J Prof Nurs*. 2014;30(2):110-123.
8. Bender M. Clinical nurse leader-integrated care delivery: an approach to organizing nursing knowledge into practice models that promote interprofessional, team-based care. *J Nurs Care Qual*. 2017;32(3):189-195.
9. Bender M. Conceptualizing clinical nurse leader practice: an interpretive synthesis. *J Nurs Manag*. 2016;24(1):E23-E31.
10. Bender M. Clinical nurse leader integration into practice: developing theory to guide best practice. *J Prof Nurs*. 2016;32(1):32-40.
11. American Association of Colleges of Nursing. Competencies and curricular expectations for clinical nurse leader education and practice. <http://www.aacnursing.org/Portals/42/AcademicNursing/CurriculumGuidelines/CNL-Competencies-October-2013.pdf>. Published October 2013. Accessed January 5, 2017.
12. Keeney S, Hasson F, McKenna HP. A critical review of the Delphi technique as a research methodology for nursing. *Int J Nurs Stud*. 2001;38(2):195-200.
13. Okoli C, Pawlowski SD. The Delphi method as a research tool: an example, design considerations and applications. *Inf Manag*. 2004;42(1):15-29.
14. Karras DJ. Statistical methodology, part II: reliability and validity assessment in study design, part B. *Acad Emerg Med*. 1997;4(2):144-147.
15. Haynes SN, Richard DCS, Kubany ES. Content validity in psychological assessment: a functional approach to concepts and methods. *Psychol Assess*. 1995;7(3):238-247.
16. Rubio DM, Berg-Weger M, Tebb SS, Lee ES, Rauch S. Objectifying content validity: conducting a content validity study in social work research. *Soc Work Res*. 2003;27(2):94-104.
17. Polit DF, Beck CT, Owen SV. Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. *Res Nurs Health*. 2007;30(4):459-467.
18. Hunt SD, Sparkman RD Jr, Wilcox JB. The pretest in survey research: issues and preliminary findings. *J Market Res*. 1982;19(2):269.
19. Institute of Medicine; Committee on the Health Professions Education Summit; Greiner AC, Knebel E, eds. *Health Professions Education: A Bridge to Quality*. Washington, DC: National Academies Press; 2003.
20. Rea LM, Parker RA. *Designing and Conducting Survey Research: A Comprehensive Guide*. San Francisco, CA: John Wiley & Sons; 2014.
21. Cronbach LJ. Construct validation after thirty years. In: Linn RL, ed. *Intelligence: Measurement, Theory, and Public Policy: Proceedings of a Symposium in Honor of Lloyd G. Humphreys*. Chicago, IL: University of Illinois Press; 1989:147-171.
22. Bender M, Williams M, Su W, Hites L. Clinical nurse leader integrated care delivery to improve care quality: factors influencing perceived success. *J Nurs Scholarsb*. 2016;48(4):414-422.
23. Bender M, Spiva L, Su W, Hites L. Organizing nursing knowledge and practice into care delivery models that catalyze quality. *Acad Manag Proc*. 2017;abstr 11434.
24. Bender M, Williams M, Su W, Hites L. Refining and validating a conceptual model of clinical nurse leader integrated care delivery. *J Adv Nurs*. 2017;73(2):448-464.