

ADVANCING NURSING EDUCATION SCIENCE:

An Analysis of the NLN's Grants Program 2008-2010

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IN A 2007 POSITION STATEMENT, the National League for Nursing (NLN) Board of Governors identified “an urgent need to provide significant funds to support research that will build the science of nursing education.” Within the past decade, the NLN addressed this need by funding 75 grants amounting to more than \$500,000. During this time period, 212 grant applications focused on nursing education research were submitted and reviewed by members of the NLN Nursing Education Research Advisory Council (NERAC).

Although the need for nursing education research has been identified by others (Ferguson & Day, 2005; Schultz, 2009; Valiga, 2006), a continuing shortage of funds for such research undermines evidence-based teaching and learning, program evaluation, and the development of innovative educational approaches designed to meet the needs of individuals, families, and communities in an ever-challenging health care environment. A similar dilemma has been noted in medicine (Tavakol, Murphy, Rahemei-Madeseh, & Torabi, 2008). It is clear that additional sources of funding for educational research are needed if nurses and other clinicians are to be prepared for the complex, high-stakes settings in which they will practice.

Because the NLN is one of the few supporters of nursing education research, potential researchers must vie for funding. Hence, the quality of submitted proposals has steadily improved, and the findings from funded research have substantially added to nursing education science. To assist potential nursing education researchers, NERAC members have offered “Tips for Success” workshops at the annual NLN Education Summit and via audio-web seminar (webinar). In addition, start-

ing in 2008, NERAC standardized its review process, created succinct web-based documents such as frequently asked questions (FAQs), enhanced communication processes, and collected data for use in performance improvement.

This manuscript details an analysis of proposals received from 2008 to 2010. The goal is to provide interested researchers with another source of guidance as they prepare future proposals.

Background In the early 1980s, the NLN created the Council for Research in Nursing Education and made a commitment to provide funds to support small investigator research projects. With NLN restructuring in 2000, four advisory councils were established, including NETIMAC, the Nursing Education Research, Technology, and Information Management Advisory Council. In 2004, NETIMAC was split into two advisory councils: ETIMAC (Educational Technology and Information Management Advisory Council) and NERAC (Nursing Education Research Advisory Council).

NERAC's purpose, as stated on the NLN website, is “to promote the scholarship of teaching and learning through providing leadership in the development of the science of nursing education, supporting nursing education research, and promoting evidence-based teaching and learning” (www.nln.org/getinvolved/AdvisoryCouncils_TaskGroups/nerac.htm). Three NERAC members are elected, and two are appointed by the NLN Board of Governors; members serve two- or three-year terms. NERAC members provide voluntary services such as recommending and supporting NLN's priorities for research in nursing education, drafting position statements, reviewing and

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ABSTRACT The National League for Nursing has responded to the increasing need for nursing education research through its grant program. Significant growth in proposals has intensified competition for funds and challenged the Nursing Education Research Advisory Council's review process. The purpose of this article is to explore the NLN's nursing education research proposals from 2008 to 2010 in order to improve performance and provide guidance to future nursing education researchers. Beginning with the 2008 grant cycle, a database was developed to assist in performance improvement. A total of 113 proposals were submitted; of those, 24 were funded for a success rate of greater than 21 percent. Various designs and samples were employed and all geographic regions of the United States were represented. Inter-rater reliability among reviewers remained high and the scientific rigor of proposals steadily increased. Increased funding from other sources is urgently needed to build the science of nursing education.

recommending the selection of recipients of NLN nursing education research grants, disseminating NLN data, promoting evidence-based teaching and learning, and collaborating with other NLN advisory councils.

The NLN's current program of funding nursing education research began in 2000 when seven proposals were funded; grants ranged from \$1,000 to \$2,000 each for a total of \$10,000. The amount allocated by the NLN each year has steadily increased to \$70,000 in 2010. Specific guidelines for proposals have been developed to aid investigators and are posted on the NLN website. Proposals are to focus on one or more of the three NLN research priorities in nursing education: a) innovations in nursing education: creating reform; b) evaluation research in nursing education: evaluating reform; c) or development of the science of nursing education: evidence-based reform.

Each year, the focus has been on particular priorities. For example, in 2008, multisite, multimethod, multiparadigmatic studies that extended knowledge of schooling, learning, and teaching in nursing were given priority. In addition to the annual priority, several other components of the proposal are considered in the review. For example, a component of the proposal may be a partnership between an established and a novice researcher who will be mentored throughout the process. With a primary goal to advance the science of nursing education, generalizable samples that include diverse participants from more than one site are important. Since more proposals are always received than can be awarded, those proposals that address NLN identified priorities and demonstrate the highest methodological rigor will most likely be funded.

The Peer Review Process NERAC uses blind peer review to make recommendations for funding. Experienced nursing education researchers volunteer to assist as reviewers in the evaluation of proposals. As the number of proposals increased and the process became more competitive, NERAC sought to establish a more objective way to award funds. Since 2008, NERAC members have followed the customary peer review process with a face-to-face panel discussion to recommend proposals for funding.

Currently, proposals are reviewed by three to five "blind" reviewers who use a scoring rubric to assess each proposal. (See Figure 1 for scoring criteria.) Reviewers rate each element of the proposal from 0 (lowest) to 4 (highest) or not applicable. A total score is generated and the reviewers are asked to recommend, or not recommend, funding. The results are forwarded to NERAC for summarization and recommendations.

Method In order to evaluate the revised process and better understand how the NLN is responding to the need for nursing education research, data were analyzed from the last three grant

cycles. Beginning with the 2008 grant cycle, a database was developed that assisted NERAC members in gathering data for each grant year. Examples of variables contained in the database include: research priority, geographic region, sample, design, and funding amounts.

Initially, the data were intended for use in an NLN Summit workshop to provide assistance to potential researchers. However, it became apparent that a continuous database would provide information that might improve NERAC's performance while providing guidance to future researchers.

In 2009 and again in 2010, immediately after the face-to-face meeting, data for the year were entered into the data file, creating a database for analysis. The sample used in this analysis includes data from all grant submissions from 2008 to 2010. Descriptive statistics are used to explore pertinent characteristics of the sample.

Findings During the three-year period, a total of 113 proposals were submitted to the NLN for funding. Of those, 24 were funded for a success rate of more than 21 percent; however, most successful applicants did not receive the amounts they requested.

The majority of proposals were received from doctorally prepared (both PhD and EdD) faculty members ($n = 102$). Four were received from MSN-prepared faculty, six from PhD candidates, and one from a faculty member with a PhD/DNP. In 2008 and 2009, the majority of stated research priorities centered on

Figure 1. Reviewer Scoring Criteria

- Soundness of plan to maintain consistency among multiple study sites (if appropriate)
 - Adequacy of protection of human subjects
 - Clarity of timetable and reasonableness of completing the study in no more than two years
 - Soundness/appropriateness of data analysis methods
 - Adequacy of plan for seeking IRB approval
 - Consistency with one or more of the subtopics of the research priority
 - Extent to which findings can be generalized
 - Clarity and adequacy of budget
 - Innovativeness/creativity of the project
 - Clarity/feasibility of any mentoring aspects of the study
 - Overall cohesiveness/coherency of the proposal
 - Clarity of writing /jargon-free syntax
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creating reform; in 2010, more proposals focused on evidence-based reform.

In 2008, five proposals did not meet the page requirements (they were longer than 20 pages), and four did not include background, need, or significance for the study. In addition, several submissions did not include page numbers, had inappropriate citations, failed to include tools to be tested or conceptual frameworks, and did not describe psychometric properties of instruments. For the years 2009 and 2010, all proposals met these requirements; however, in 2009, one proposal was not received on time and was withdrawn from the review process.

Requests for funding ranged from a low of \$1,565 to a high of \$20,173; average funding requests were \$16,482 (2008), \$11,943 (2009), and \$9,864 (2010). Applications were submitted by faculty in all parts of the United States with some multi-state applications in 2009; one proposal was international. Of the proposals that were successfully funded, 19 were quantitative in nature (79 percent), 3 were qualitative (13 percent), and 2 (8 percent) used mixed methods. Over the three years, various designs were employed, including a quasi-experimental cross-over design; quasi-experimental designs using pre-post testing; instrument development; cross-sectional correlational designs; qualitative designs using interviews and observations; and a randomized clinical trial.

The majority of targeted samples focused on nursing students from all levels of undergraduate programs, as well as graduate students. Some focused on faculty; in one case, the targeted sample was patients with chronic diseases. Samples in 2008 tended to be situated in one or two sites; multisite samples emerged in 2009, and a national sample was included in 2010.

For the three-year period, proposal scores ranged from a low of 38 to a high of 88 (possible range, 0 to 92). For those proposals that were successfully funded, mean scores were: 70.2 (2008), 77.7 (2009), and 63.6 (2010). Among reviewers, inter-rater reliability was as follows: 0.85 (2008), 0.83 (2009), and 0.75 (2010). Five reviewers evaluated proposals in 2010, which may account for the slightly lower inter-rater reliability score; four reviewers were involved in 2008 and 2009.

Discussion Over the three years of data collection, the funding success rates were consistent and reflect increasing competition for limited dollars. The overall success rate of 21 percent is higher than the estimated 18 percent rate reported for 2010 by the National Institute for Nursing Research (NINR). Reasons for unfunded proposals in 2008 were largely related to methodological problems such as poor or no rationale for sample sizes,

qualitative studies that did not address trustworthiness or reliability of data, no mention of human subjects, or no information on study instruments. There were also problems in overall clarity and conformance to stated requirements, such as allowable budget expenses. In 2009, unfunded studies needed more development such as attention to significance, the theoretical basis, psychometric properties of instruments, as well as budget justification. By 2010, significant improvements were seen in terms of clarity and organization, prior pilot work, theoretical frameworks, and a clearly stated significance to nursing education. Those proposals that were not funded tended to be single-site studies without high impact. In addition, most were not evaluation research, the designated priority for this grant year.

Of note, in 2010, principal investigators for two of the seven funded proposals (29 percent) were PhD students, showing evidence for this area of doctoral study. Proposals were received from all geographic locations in the United States and were fairly consistent over the data-gathering period. More quantitative than qualitative studies tended to be funded; however, over time, the rigor of qualitative studies has improved and mixed-methods approaches are emerging. Finally, mean proposal scores showed a decrease in 2010, and may be reflective of the use of more reviewers and/or the fact that most applicants did not address the priority for evaluative research.

In general, the rigor of proposals has steadily increased over the three years. Most are well written and address significant topics. Selected reviewer comments are presented in Figure 2.

These improvements in the rigor of proposals may be related to NERAC members' recent activities, such as workshops and webinars designed to assist investigators in developing sound proposals, enhanced website documents, the annual face-to-face meeting to review and make recommendations for funding, and individual NERAC members' willingness to go above and beyond to improve the process for grant review.

Conclusions Though the NLN has been a consistent source of funding, there remains an unmet need for additional resources for nursing education research. Each year, many well-reviewed proposals are left unfunded. Furthermore, the amount of funding offered through the NLN remains far below the level offered by other organizations that sponsor research awards. The scarcity of funds poses a significant threat to potential investigators in terms of their own programs of research and leaves nursing education without the evidence it needs to continuously improve and innovate. More resources are required from additional sources to address this concern.

Figure 2. Selected Reviewer Comments

2009 proposals “Excellent proposal. Well written and interesting multi-site sampling. The budget is detailed and shows in-kind funds for personnel. Plans to maintain consistency at all five sites are described. This study may result in new nursing knowledge which may be generalizable to other same or similar schools nationwide.”

“This is an excellent proposal! It is very clear, well thought out, and provides a great attention to detail. Kudos to the researchers for their extensive efforts to recruit a varied group of participants.”

“This is an impressive project. I believe the instruments described...could be very valuable for assisting nursing programs to increase their ability to meet the needs of their current and potential Hispanic students. The study represents a novel approach to addressing health professions education at the institutional level, which has implications far beyond a single program. The theoretical framework is well thought out and developed.”

2010 proposals “Well-written proposal for a very important current issue in nursing education: diversity and creating and maintaining a diverse nursing workforce. I would love to see a follow-up study of the students several years after graduation to see if the mentoring relationships continued and what the outcomes were.”

“I truly believe we need this work to be completed, for the benefit of nursing education and nursing education research. The study is very carefully crafted, and the need for it is great.”

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Attention to the specified research priority, addressing the significance to nursing education, and creating a well-designed study that is generalizable or that can lead to future generalizable studies will increase the investigator’s chances for success. Attending NLN-sponsored educational events targeted to this funding opportunity and/or seeking consultation from an experienced nursing educational researcher might also be helpful. Tapping into other sources of educational funding may be an option for some investigators. For example, specific funding may be available from the National Council of State Boards of Nursing for research commissioned by the council.


References

Ferguson, L., & Day, R. (2005). Evidence-based nursing education: Myth or reality? *Journal of Nursing Education*, 44, 107-114.

National League for Nursing. (2007). *The need for funding for nursing education research* [Position Statement]. Retrieved from www.nln.org/aboutnln/PositionStatements/nursingresearch_051807.pdf

National Institute for Nursing Research. (2010). *NINR funding guidelines*. Retrieved from www.ninr.nih.gov/ResearchAndFunding/DEA/OEP/FY+2010+Funding+Strategy+for+Research+Grants.htm

Schultz, C. M. (2009). Teaching-learning in the affective domain. In C. M. Schultz (Ed.), *Building a science of nursing education: Foundations for evidence-based teaching-learning* (pp. 217-300). New York: National League for Nursing.

To meet the need for additional funding, others have begun to provide resources. For example, an individual donor provided funds for a joint Sigma Theta Tau International/NLN Grant designated to “advance the science of nursing education through the use of technology in the dissemination of knowledge” (www.nln.org/research/index.htm). And in August 2010, the NLN announced the establishment of the NLN Jonas Scholars Program, funded by a grant from the Jonas Center for Nursing Excellence in New York City. This program supports 10 PhD candidates as they work to complete their doctoral dissertations. (Five scholars have been selected; a second cohort will be named in spring 2011). However, the level of funding for nursing educational research remains frustratingly low and new and expanded sources are urgently needed. With increased resources and continued high quality and innovative proposals that can lead to successful awards, nursing education researchers will be able to provide the evidence required to effectively educate tomorrow’s nurses. 

About the Authors *Joanne R. Duffy, PhD, RN, FAAN, a professor at Indiana University School of Nursing, Indianapolis, is immediate past chair of NERAC; during her leadership, NERAC began the performance improvement database and the face-to-face grant review panel. Marilyn Frenn, PhD, RN, CNE, ANEF, current chair, is associate professor, Marquette University, Milwaukee, Wisconsin. She continues to improve NERAC activities through several means, including the website, webinars, and improvements in the proposal review process. Barbara Patterson, PhD, RN, a professor at Widener University School of Nursing, Chester, Pennsylvania, is a current NERAC member. The authors are grateful to Ramona Nelson, PhD, RN, FAAN, ANEF, NLN consultant to NERAC. For more information, contact Dr. Duffy at jrduffy@iupui.edu.*

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Tavakol, M., Murphy, R., Rahemei-Madeseh, M., & Torabi, S. (2008). The involvement of clinicians in medical education research. *Quality in Primary Care*, 16(5), 335-340.

Valiga, T. (2006). Why we need evidence-based teaching practices. In R. Levin & H. Feldman (Eds.), *Teaching evidence-based practice in nursing* (pp. 261-271). New York: Springer Publishing.