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Nurse Researchers in Children's Hospitals

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Abstract: *Little is known about the role of nurse researchers (NRs) and the structure of nursing research programs in children's hospitals in the United States. This descriptive study obtained survey data from 33 NRs. Data suggest that the NR role is emerging and has both commonalities and unique components when compared with the previous studies of NRs in adult hospitals. Most participants have been in their position for less than 4 years. Conducting research, having staff development related to research, and facilitating evidence-based practice or research were common responsibilities. The structure of nursing research programs impacts both the NRs and the program outcomes*.

For more than two decades, nurse researchers (NRs) have been employed in clinical settings as one strategy for grounding practice in research (Knafl, Hagle, Bevis, & Kirchhoff, 1987). This strategy appears to be increasing as institutions integrate evidence-based practice (EBP) initiatives and seek Magnet designation which delineates nursing research as central to excellence in nursing practice (Aiken, 2002; Scott, Sochalski, & Aiken, 1999).Yet, we know little about these NRs. Although there is some literature that describes the role of the NR in hospitals, it is more than 10 years old. In addition, there are no data on NRs in hospitals that care only for children. NRs in children's hospitals are in a unique position to expand the evidence for care of children and families and make substantial contributions to knowledge that will shape nursing practice. Understanding their role and impact is critical. Thus, the purpose of this study was to describe the role, activities, and outcomes of NRs in children's hospitals in the United States.

Background and Significance

Two previous studies, conducted in the 1980s and 1990s, explored the structure of research departments and the role of NRs in hospitals serving primarily adults and provided the

framework for the current research. The samples for both studies were drawn from the members of the Nurse Researchers Employed in Clinical Settings, a subgroup of the American Nurses Association Council of Nurse Researchers (Notter, 1972) which no longer exists. In the first study, 37 NRs were identified who met criteria of at least half-time employment as an NR in a clinical agency for at least 6 months (Hagle, Kirchhoff, Knafl, & Bevis, 1986; Knafl, Bevis, & Kirchhoff, 1987a, 1987b). Thirty-four NRs agreed to participate and were surveyed by telephone about their role and the organization in which they worked. A great deal of variation was found among the institutions in regard to organizational context of the NRs, criteria for performance evaluation, and role responsibilities. Respondents spent an average of 54% of their time on research activities (Knafl et al., 1987b). These activities were fairly evenly split between conducting their own research and facilitating the research of others. The remainder of their time was divided between administration and staff development activities. Five types of research activities were identified: clinical practice, nursing administration, research utilization, education, and evaluation (quality assurance studies).

Performance of the NRs role was evaluated using various criteria including contributions to the organization, as well as scholarly publications and presentations. However, specific outcomes were not reported in either area. The NRs identified goals and strategies used for successful implementation and performance of their role (Knafl et al., 1987b). A major goal identified by NRs was to promote interest in nursing research. Strategies used to achieve this goal included ensuring visibility and availability of the NR to nursing staff, initiating educational opportunities for staff to learn about nursing research, and including nursing staff in the conduct of research studies. The NRs also identified support of the chief nurse executive (CNE) as being critical to successful implementation of this role.

The second study was conducted 10 years after the initial survey (Kirchhoff & Mateo, 1996, Mateo & Kirchhoff, 1995). Out of 142 eligible NRs, 102 responded to a mailed survey, demonstrating a marked increase in employment of NRs over the previous decade. Of this group, 55.7% had exclusive appointments to clinical settings, whereas 28.3% had joint appointments with universities. Sixty-three percent of the NRs were employed in regional medical centers and 7.5% in community hospitals. The vast majority worked in urban settings (82.1%) and was employed full-time (87.7%). Reporting relationships, budgetary and clerical support, and amount of time spent on research, administrative, and staff development activities were almost identical to the first study. However, the number of NRs reporting that they conducted their own research was markedly higher (93.4% vs. 47%). The same was true for involvement in projects related to research utilization. In the first study, only 34% reported research utilization activities, whereas in

the second study, 80% reported doing so. These two studies provide a useful description of the structure of nursing research activities and the role of the NRs in clinical institutions in a specific subgroup of NRs.

In addition to the increase in the number of NRs in health care organizations, there has been a concomitant increase in the number of advanced practice nurses (APNs) whose role description includes nursing research. Nurse practitioners and clinical nurse specialists (CNSs) experience common barriers to conducting nursing research: lack of time, knowledge, and resources, including available consultation from doctorally prepared NRs (Imle, 2000; Niederhauser & Kohr; 2005, Profetto-McGrath, Smith, Hugo, Taylor, & El-Hajj, 2007). Reynolds and Magnan (2005) and Ruccione, Hinds, Wallace, Kelly, and the Children's Oncology Group Nursing Discipline (2005) suggested collaborative NR–APN dyads are important to nursing research outcomes. The APN role typically focuses on clinical care, whereas the primary role of the NR is clinical research. The NR–APN collaboration can be important as it provides a clinical base for the NR and support and resources for the APN.

Understanding the role of the NR is critical to the advancement of nursing research in children's hospitals. It has been more than a decade since the NR role and its impact within the organization have been comprehensively studied. Information on specific outcomes of nursing research programs has been very limited, and no information was found that examined how NRs function in specialty institutions, such as children’s hospitals. Further, the Magnet designation program has emerged and influenced how nursing research is incorporated into practice (Aiken, 2002). The current study addressed these gaps in knowledge and examined the change in this role over the last 10 years. This information will be useful to organizations with active nursing research programs as well as to organizations in the early stages of program development.

The purpose of this study was to describe the role of NRs and the structure and outcomes of nursing research departments or programs in children's hospitals in the United States. The specific aims of this study were to

1. describe the roles, reporting structures, activities, evaluation criteria, and job satisfaction of NRs in children’s hospitals;
2. describe the structure of individual nursing research departments or programs in children’s hospitals;
3. identify strategies within these institutions that have been successful in supporting and expanding nursing research; and
4. describe major outcomes of nursing research programs in children’s hospitals.

Method

Design, Setting, and Sample

A cross-sectional descriptive survey design was used in this study. The sampling frame for this study included masters or doctorally prepared nurses (a) who worked in children's hospitals that were either freestanding or a part of a larger health system and (b) for whom research was an identified organizational responsibility. NRs who were a part of a larger health system were included in the sampling frame if they were exclusively responsible for pediatric nursing research.

Potential participants were identified through the membership list of hospitals belonging to the National Association of Children's Hospitals and Related Institutions (see the Web site). The list was examined to include all freestanding children's hospitals and to eliminate "related institutions" or hospitals limited to one type of service, such as rehabilitation. The resultant list of hospitals was examined further to ensure inclusion of the top 20 children's hospitals named by *U.S. News and World Report* (Best Hospitals, 2006) and the top 30 children's hospitals named by the *Child* magazine (Cicero, 2007), some of which were children's hospitals that were a part of a larger health system. From this process, a final list of 103 children's hospitals was created. The office of the CNE of the hospitals on the list was contacted by a member of the research team to verify that the children's hospital was a freestanding or a children's hospital which was part of a larger system and whether a master's or doctorally prepared nurse was employed at the institution with responsibility for pediatric nursing research. If positive responses were received to both study inclusion criteria questions, the name and contact information of the NR were requested to send study materials directly to the NR. This process identified a sample of 66 NRs in 45 children's hospitals in the United States including 2 NRs at the organization conducting the current study.

Recruitment and Procedure

The study materials, which included a cover letter, informed consent document, questionnaire, stamped self-addressed envelopes, and a $5 gift certificate for a national coffee chain, were mailed to the 66 NRs. To assure that participants remained anonymous, no identifying codes were used on the questionnaires in this study. Three weeks after the initial mailing, one reminder postcard was sent to the total sample thanking them for their participation or reminding them to return the questionnaire if they had not already responded.

Instrument

A 27-item questionnaire was developed for use in this study based on a review of the

literature. The questionnaire was divided into four sections: (a) general descriptive information of the NRs and institution, (b) role of the NRs, (c) structure of the nursing research program, and (d) individual and research program outcomes. The format included a variety of types of questions such as multiple choice, Likert-type scales, and open-ended questions.

General descriptive information included questions about the individual such as title, length of time as an NR, and academic preparation, as well as questions about the institution, such as the size of the hospital, education level of nursing staff, university affiliations, and Magnet status.

The role of the NRs was measured with six items based on a review of the literature addressing (a) description of the position, (b) type of responsibilities and percentage of time spent on each responsibility, (c) activities, (d) impact on organization of these activities, (e) criteria for evaluation, and (f) level of satisfaction with the role. The structure of the nursing research program was measured with four items addressing the placement of the NR within the structure of the institution, support by the institution for nursing research, strategies for increasing nursing research, and funding sources.

Individual and organizational outcomes were measured by asking the NRs to describe how outcomes were measured by their institutions, how the structure of the programs affected outcomes, and the effect of the nursing research programs on EBP and research utilization. NRs were also asked to report specific outcomes, such as number of publications and presentations, and to identify strategies that contributed to the success of the nursing research program, barriers to success, and major goals for the coming year. The questionnaire was evaluated by an NR not participating in the study and three consultants who were experts in the development of surveys. On the basis of their feedback, several items were revised to improve clarity.

Data Analysis

Descriptive statistics were used to summarize the data. Percentages were used to describe categorical or nominal data, and means, medians, standard deviations, and ranges were used to describe interval data and data collected using Likert-type scales. Content analysis (Boyatzis, 1998; Morse & Field, 1995) was used to identify themes in the narrative data generated by the open-ended questions.

Results

Description of the Sample

Thirty-six of the 66 surveys distributed were returned, for an overall response rate of 55%. When separated by educational preparation, the response rate for doctorally prepared NRs in

the sample was 66%, and the response rate for those without a doctorate was 36%. Three surveys were omitted from analysis as the NRs did not meet the inclusion criteria, resulting in a sample size of 33 used for this analysis. NRs (Table 1) came primarily from large (200 beds or more) urban hospitals that had more than 50% baccalaureate-prepared nurses, had a research council or committee, were working toward or had achieved Magnet designation, and had affiliations with local universities for research. The vast majority of these NRs reported that their institution employed one to three doctorally prepared nurses who conducted research or had organizational responsibility for research activities.

Educational preparation was varied. Eighty-five percent (*n* = 28) of the sample had doctorates; most of these (*n* = 23, 85%) had doctorates in nursing. Nurses with doctorates in another field primarily held degrees in education (doctor of philosophy [PhD] or doctor of education).

Respondents reported three primary job titles: (a) NR (*n* = 8, 24%), (b) director of nursing research with the sole responsibility for nursing research (*n* = 7, 21%), and (c) director of nursing research and another named area such as education, outcomes, professional practice, or advanced practice (*n* = 9, 27%). Nine percent (*n* = 3) held other senior-level positions, and 19% (*n* = 6) had other job titles (CNS, advanced practice nurse, consultant, and program manager). Almost 60% of the respondents had been in their position 4 years or less.

Aim 1: To Describe the Roles, Reporting Structures, Activities, Impact, Evaluation Criteria, and Job Satisfaction of NRs in Children's Hospitals

Respondents reported three primary descriptions of their role. Almost 40% of the NRs (*n* = 13, 39%) indicated that their position was primarily to facilitate EBP and/or research in the institution, less than one tenth (*n* = 3, 9%) indicated that their primary responsibility was to conduct their own research, and almost a third (*n* = 10, 30%) indicated that their position was equally split between conducting and facilitating research. A variety of primary roles were reported by the remaining NRs.

Most NRs identified a wide variety of responsibilities (Table 2). Almost all had responsibilities for research-related staff development and administration, facilitation of research of others, and EBP activities. A majority was responsible for conducting their own research. Fewer were responsible for nonresearch administration and the conduct of institutionally driven research, and less than half were responsible for quality assurance and staff development not related to research. The average percentage of time spent on each of these priorities, however, varied substantially. Respondents spent the highest percentage of time on their own research, facilitation of the research of others, and EBP activities.

Placement of the NRs in the organization had three patterns. Sixty-one percent (n = 20) of the sample reported directly to the senior nursing administrator in the institution (e.g., vice president, chief nurse officer, and CNE), and 39% (n = 13) had another type of reporting relationship, most commonly to an administrator at the director level. In addition, 9% (n = 3) of these respondents had dual reporting relationships (institution–academia or institution–research entity).

A majority of NRs reported that their activities included publications (n = 15, 55%), presentations (n = 18, 64%), and EBP projects that changed practice (n = 14, 52%). About a third reported research projects that changed practice. In addition, NRs most frequently indicated that they had "some" to "significant" impact on the organizational activities. For example, more than half of the respondents reported having either an "impact" or a "significant impact" on EBP. In contrast, more than half reported only "some impact" on research utilization, funding for nursing research, and time for nurses to participate in EBP and research projects.

When asked to identify the four most important criteria for evaluating their own job performance, more than 50% of the sample reported involvement of nursing staff in research, attainment of departmental goals, and leadership skills (Table 3). About 30% of the respondents also included the number of publications and/or presentations facilitated or conducted in collaboration with staff as important criteria for evaluation. Less frequently reported were publication and/or presentation criteria that focused on the individual's research.

Of the 33 NRs in this study, 29 responded to the satisfaction with nurse research role question. Sixty-two percent (n = 18) were either satisfied or very satisfied with their role, whereas 38% (n = 11) were unsure, dissatisfied, or very dissatisfied.

Goals for the coming year identified by NRs in the narrative data fell into three general areas. The first area was developing and expanding the nursing research infrastructure in the institution. The second area was facilitating research of others and including activities such as developing educational programs, scholars programs, fellowship and mentoring programs; increasing staff researchers and committee members; and connecting staff nurses and APN to existing programs of research. The third area addressed implementing or expanding the individual's own programs of research including development of applications for funding. Across each of these areas, NRs reported goals related to completing ongoing research studies and EBP projects and disseminating results of activities with publications and presentations.

Aim 2: To Describe the Structure of Individual Nursing Research Departments and Programs in Children's Hospitals

The most frequent components of the structured nursing research programs were (Table

4) (a) educational and mentorship programs, such as EBP educational series, brown-bag lunches workshops, or fellowship programs; (b) budgeted NRs position(s); (c) a nursing research council or committee; (d) a mission statement related to nursing research; (e) a research institute either as a part of or affiliated with the hospital; and (f) a budget for the nursing research program. Respondents not only described several types of reporting structures and a number of different job titles, they also reported a variable level of institutional support for nursing research.

One indication of strong institutional structural support was the presence of a budget for the NR position, as well as for the nursing research department or program. This budget support most often included clerical support (n = 18, 55%), statistical support (n = 17, 52%), software support (n = 17, 52%), technology support (n = 14, 42%), and data collectors (n = 11, 33%). Responding to an open-ended question regarding other budgeted support, respondents identified (a) nonpatient care time for research activities, (b) support for EBP fellowship or intern program, (c) additional NR positions, (d) funding for research consultation, (e) access to a clinical research center, (f) research grants including matching funds for externally funded projects, (g) an endowed chair in nursing research, and (h) awards to recognize nursing researchers.

When asked to describe additional types of institutional support for nursing research, many NRs first described the strong and broad support of administration "all the way to the top level" and the commitment to research throughout the institution. Other specific tangible administration support included commitment to holding local conferences for the dissemination of research and to support staff presentations at professional meetings, access to medical library and librarian, sabbaticals for research, and access to resources (e.g., editorial, grant preparation, and statistician) from the research institute affiliated with the hospital. In addition, NRs identified the institution's relationships with university partners as supportive to nursing research. These partnerships included diverse arrangements, such as a partial faculty position devoted to mentoring nurses in the hospital, the joint sponsorship of an endowed chair or professorship, the development of a nonpaid adjunct clinical position for faculty at the hospital, and collaborative student–faculty–staff projects that advanced nursing research.

Respondents indicated that individual nursing research studies were supported by five primary sources of funding (Table 5). Most of the funding was provided by their own institution and related foundations. However, substantial funding was also reported by nursing specialty organizations, the institution's General Clinical Research Center, and federal sources. A few respondents also identified industry, pharmaceutical companies, and private foundations as sources of funding.

In response to an open-ended question that addressed the structure of nursing research

programs in their institutions and how this structure affected outcomes, many NRs in this survey thought that the structure was important and affected both their individual success and the program outcomes. The most common response indicated that, if the structure had wide institutional support and was aligned with hospital goals, improved research outcomes were more likely to occur. On the other hand, some respondents reported that an absent, limited, ambiguous, or conflicting structure impeded program outcomes.

Along with these positive structural components, NRs identified barriers to implementing the institution's nursing research programs. Overwhelmingly, the most common barrier to success of the nursing research program identified by respondents was the lack of time. Other major barriers were funding for research support staff and for staff conducting research and the culture of research within the institution. This culture of research was negatively impacted by a lack of understanding of and/or the low importance placed on nursing research, lack of support from nonnursing administration, emphasis on physician research, and limited staff research education and experience.

Aim 3: To Identify Strategies Within Children's Hospitals That Have Been Successful in Supporting and Expanding Nursing Research

In response to a structured question, NRs identified that the most frequently used strategy to increase nursing research activity was to involve the bedside nurse (Table 6). Strategies to engage the bedside nurse varied but included activities such as involving bedside nurses in (a) the research council, (b) fellowship programs and education, and (c) generation of research questions and (d) serving as coinvestigator on studies. Providing the bedside nurse with mentorship and providing resources were other ways respondents identified to engage this critical population. Mentorship for the bedside nurse included any or all components of the research process including grant development and human research review board applications. Respondents indicated that there was an array of opportunities for bedside nurses to participate in EBP or research activities. Staff nurse participation was seen as a "ladder of involvement," with opportunities for the staff nurse to continually increase their involvement.

Developing EBP educational sessions was also a common strategy used to increase nursing research activities. Of the NRs who indicated that they used EBP educational sessions, 79% (n = 26) indicated that they had a beginning EBP series. However, 70% (n = 23) either did not have an advanced workshop series or did not respond to the question. Over half of the NRs reported that participation in research was an expectation in their institution. Staff scholarships to conduct or participate in research projects were noted by over a third of NRs. Other strategies reported by NRs were research newsletters, research Web sites, nursing grand rounds, and

journal clubs.

The top strategies (Table 7) that contributed to the success of the nursing research program, endorsed by over 50% of the NRs, included visibility and availability of the individual NRs to staff, presence of a formal research structure, conduct of studies meaningful to the bedside nurse, implementation of educational opportunities, establishment of relationships at all levels of the organization, and clear vision and goals. Having budgetary support and targeting research to match institutional goals were endorsed by almost half of the NRs. Other strategies with less support included conducting quality improvement activities and starting the institutional research program with a highly visible research project.

Aim 4: To Describe Major Outcomes of Nursing Research Programs in Children's Hospitals

Responding to an open-ended question, NRs identified a wide range of outcomes used to evaluate the success of nursing research programs. The three most frequently nominated were disseminating findings through publications and presentations, developing projects that addressed the institution's EBP and research agenda, and obtaining funding for these projects. In addition to these traditional outcome measures, participants reported other outcomes used in the evaluation of the nursing research program at their institution, including (a) number of staff participating in research, (b) evidence-based policies and procedures, (c) staff attendance at research workshops, (d) staff participation in research committees, (e) evidence-based standards of practice developed, (f) quality improvement activities, (g) nursing grand rounds, (h) meeting of departmental goals, and (i) number of nurses enrolled in doctoral programs.

Discussion and Implications

The results of this study provide a useful description of the emerging roles of NRs as well as the structure and outcomes of nursing research programs in children's hospitals today. The diversity of roles, position title, reporting structure, and responsibilities identified in this study mirrored the previous findings in the literature. Knafl et al. (1987b) identified three distinct models of enactment of the NRs role (i.e., traditional scientist, associate, and facilitator). Two of these roles were prominent in this study, the facilitator and the traditional scientist, with the traditional scientist reported less frequently than in the previous study and the facilitator being more prominent as well as the most prominent in this study. A blended role, incorporating the responsibility of the NR to conduct individual programs of research and to facilitate the research of others, emerged as the second most frequent role reported in this study. Mateo and Kirchhoff (1995) described this blended role but attributed it to the newness and expansion of the NR role.

Considering the changes within health care organizations in the last 14 years, an alternate explanation is that the role of the NR has changed to accommodate needs for research activities throughout the organization. Forces that have influenced not only the role but also the strategic plan of nursing research departments in children's hospitals include the EBP movement, the Magnet recognition program, and the need to advance nursing science. These forces may also have been responsible for changing the nature and placement of the NRs in the organizational hierarchy. The title of *clinical nurse researcher*, reported as the most frequent title in previous studies (Kirchhoff & Mateo, 1996; Knafl et al., 1987a, 1987b), was replaced in frequency by the title of *director* in the current study. This title may reflect an elevation of both the NRs and the nursing research program in the hierarchy of the organization. It is also possible that the varied titles may have been chosen to facilitate the NR role in each individual institution. It is unclear if outcomes would be affected by these differences in titles.

NRs believed that structure was important to the outcomes of their research department and their research and projects. It is not difficult to envision how a strong infrastructure could have a major impact on the number and quality of nursing research studies, EBP projects, publications, and presentations. An interesting finding was that these are the same outcomes identified by Knafl, Hagle et al. (1987). Although this study noted that infrastructure varies from institution to institution, some NRs are investigating or have already affiliated with academic institutions for support in establishing programs for research and EBP activities. Given the increasing number of NRs identified with facilitator and blended roles in this study and the decreasing number of traditional scientists in the NR role, affiliation with academic institutions may be even more critical for the future research activities. Such collaboration can help both institutions achieve common outcomes. Because most NRs who responded to this study represent larger children's hospitals in urban settings, it remains to be seen if this is a possible alternative for smaller children's hospitals in more rural settings.

Many NRs have budgets with comprehensive support to achieve departmental goals, which indicates that this position is a priority for an organization. However, it was also noted that the budget was often not sufficient enough to achieve all of the goals, and frequently, outside funding was necessary to complete specific research activities.

The major barriers identified to implementing research and EBP activities in children's hospitals were time, funding, personnel, and culture. Although the lack of dedicated time both for themselves and staff was the most common barrier identified by NRs, this time may indeed be a reflection of the culture and lower priority given to nursing research activities. A specific challenge for the NRs was overcoming barriers to engaging the bedside nurse in research and

EBP. Many were using a stepwise approach, including educational seminars, participation in research, and research scholarship programs. Other NRs reported brown-bag sessions, EBP classes, and fellowship programs. It is interesting to note that over half of the NRs reported that participation in research is an expectation for staff nurses. The current focus on research education may be addressing basic educational needs of staff nurses to participate in research activities. Time for research activities may expand as basic educational needs are met and expectations remain.

Goals of NRs in this study progressed from those reported in previous studies of NRs. Previously, the focus was on improvement of autonomy, demonstration of importance of nursing research, and acceptance of the NRs. Participants in this study reported goals as developing and expanding infrastructure, developing new programs to expand the research competencies of nurses throughout the institution, and developing the individual NR's program of research. The current Magnet culture in these institutions, the recent emphasis on EBP at the undergraduate and graduate level in academic preparation of nurses, and the institutions' focus on EBP may be factors that contributed to this evolution in goals. Because of their advanced training and specific focus on research, NRs in pediatric centers and children's hospitals are uniquely positioned to promote knowledge discovery as a foundation for EBP.

Approximately one third of the NRs were unsure or dissatisfied with their role, which is an increase from previous studies (Knafl et al., 1987b; Mateo & Kirchhoff, 1995). Data from this study do not provide an understanding of the factors contributing to the perception of job satisfaction. However, several possible explanations are offered here. First, the role is a new one for a majority of the NRs in the current study. Adapting to a new and challenging role such as this may affect perception of job satisfaction Second, the role may lack clarity for some NRs. Third, we noted that the evaluation criteria reported by NRs placed more emphasis on the evaluation of the facilitator role rather than on the evaluation of the NRs' individual program of research. It is possible that this lack of recognition of the NRs' program of research in their evaluation criteria reflects a devaluation of this component of the NR role and leads to dissatisfaction. Finally, there may be a lack of support or mentorship for these NRs in their own institutions. In this study, 76% of participants reported zero to three doctorally prepared NRs in their institution. This finding of decreased satisfaction certainly warrants exploration in future studies. In addition, organizations may need to consider role clarity, the percentage of time allocated to the NRs' individual program of research, and the mentorship needs to maximize retention.

No published or commonly held educational expectations for NRs are available. In this study, most NRs who responded to the survey were doctorally prepared. The current

environment requires extensive expertise in the design, critique, implementation, and dissemination of research for these positions. In many institutions, however, the APN is emerging as a leader in the EBP activities. The APN remains an active and important role in these institutions. However, Imle (2000) found that CNSs spend less time on research than on other parts of their role, whereas others (Nelson, Holland, Derscheid, & Tucker, 2007) recommended that NRs mentor CNSs to develop their research skills and increase their knowledge of research methods. As APN education and training can vary; it is clearly possible that a master's-prepared APN with advanced research training could be responsible for EBP leadership in an institution. Alternatively, APNs with less training and experience may need consultation and mentoring from doctorally prepared researchers (Imle, 2000; Nelson et al., 2007). Thus, understanding the role and function of the NR is critical to building an expert cadre of professionals committed to the development and use of evidence.

The future development of NRs will be important to children's hospitals in this era of interdisciplinary research teams, translational research, and focus on outcomes. The potential is strong for PhD-prepared NRs in children's hospitals to advance nursing science and provide leadership in the development of interdisciplinary teams in which nurses contribute not only as equal members but also as principal investigators. They are in a unique position to generate new population-specific evidence in their own institutions and to collaborate with other NRs in similar settings. This development of new knowledge will further build the science of and shape nursing practice. The NR role will most likely continue to evolve as institutions strive to increase nursing research and EBP, but it can also be expected to adapt to ever-changing health care organizations. Future research that describes the contribution of NRs in children's hospitals to nursing science and the infrastructures and strategies that supported these contributions can be useful to all children's hospitals, even those that do not have a formal NR position.

Limitations

A thoughtful strategy was developed by study authors to identity NRs in children's hospitals across the country. However, because there is not a common definition of NRs, a national list of these individuals, or an organization of nurses in clinical settings, this study could have omitted NRs who met the inclusion criteria. The responding NRs are a convenience sample, and results may not be generalizable to all NRs in children's hospitals. Further, because it was important to assure the NRs' anonymity, we chose not to identify the institutions from which the NRs came. Although this gave us some confidence that we obtained candid responses, it did not allow us to indicate how many children's hospitals were represented by the participants in this

study. It is interesting that our response rate for doctorally prepared invitees was almost double that of those without a doctorate. This study casts a wide net to identify potentially appropriate participants, although we expected most participants would be those with doctorates.

The previous studies investigated the role of the NR and nursing research programs from the perspective of both NRs and the CNEs with whom the NRs worked (Knafl, Hagle, Bevis, Faux, & Kirchhoff, 1989). This study omitted the CNE. The perceptions of the CNEs regarding the NRs and nursing research programs would be an important part of understanding nursing research in children's hospitals and should be addressed in the future (Pettengill, Knafl, Bevis, & Kirchhoff, 1988). This study and others have found that administrative support and commitment are critical if nursing research endeavors are to be successful (Reynolds and Magnan, 2005; Van Mullem et al., 2001). Because CNEs are pivotal to operationalizing nursing research in children's hospitals, including them in further research would be helpful.

Further, although efforts were made to address content validity by basing the questionnaire on a review of the literature and obtaining expert review, other aspects of reliability (test–retest) and validity (construct) have not been established. Future evaluation of the instrument should be conducted. However, due to the fairly large response rate, particularly the 66% response rate from the doctorally prepared NRs, data from this study are useful to NRs, administrators, and those developing nursing research in children's hospitals.

Conclusion

This study was a first attempt to describe the roles of NRs, as well as the structure and outcomes of nursing research programs, in children's hospitals in the United States. Data suggest that the role is emerging and has both commonalities and unique components when compared with previous studies of NRs in adult hospitals. Most NRs in this study have been in their position for less than 4 years. They identify a variety of reporting structures, research activities, EBP activities, goals, and outcome measures. Conducting research and staff development related to research and facilitating EBP and research were common NRs responsibilities. The structure of nursing research programs impacts both the NRs and program outcomes. Continued development of the NR role is critical due to the evolving nature of health care, EBP, and translational research in children's hospitals. Further research that contributes to the understanding of the NRs' outcomes, factors influencing NRs' job satisfaction, and the structure and outcomes of nursing research programs is important.

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Notes

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Appendix

Table 1

Institutional Characteristics Reported by Participants (*n* = 33)

Characteristic	*n*	%
Inpatient beds		
Less than 200	4	16
200 249	11	33
250 299	7	21
300 or more	10	31
No response	1	3
Location		
Urban	31	94
Bachelor of science in nursing		
More than 50%	20	66
Research committee or council in the hospital		
Yes	29	88
Have or are working toward Magnet		
Yes	29	88
Affiliation with university		
Yes, for education	29	88
Yes, for research	12	36
Nurses enrolled in doctoral programs		
0	11	33
1 3	11	33
4 6	5	15
No response	6	18
Research institute in or affiliated with institution		
Yes	25	76
Number of doctorally prepared NRs in the institution		
0	2	6
1 3	19	70
4 or over	6	18
No response	6	18

Table 2
NR's Responsibilities and Allocation of Time

Types of Responsibilities in Order of Frequency	Percentage NRs With This Responsibility *	Percentage of Time Spent on This Responsibility †			Rank by Time Spent on This Responsibility
		M	*SD*	Range	
Administration: research-related	94	8.79	6.41	1 25	8
Staff development related to research	92	11.63	8.94	2 40	6
Facilitating research of others	93	21.64	18.42	1 90	2
EBP	92	18.08	14.00	2 40	3
Conducting own research	76	24.00	16.80	2 60	1
Administration: nonresearch	61	16.69	17.56	0 70	4
Conducting institutionally driven research	58	12.67	13.71	2 60	5
Quality assurance	46	9.46	7.01	1 20	7
Staff development unrelated to research	42	8.67	6.37	2 20	9

Table 3
Criteria for Evaluation of NR's Performance (*n* = 33)

	Endorsing Criteria, *n*	Endorsing Criteria, %
Involvement of staff in research	22	67
Attainment of department research goals	22	67
Leadership skills	20	61
Number of publications facilitated or collaborative research with staff	10	30
Number of article or poster presentations facilitated or collaborative research with staff	9	27
Procurement of research funding	9	27
Number of publications based on NRs' own program of research	6	18
Number of article or poster presentations based on NRs' own program of research	3	9

Table 4
Types of Institutional Support for Nursing Research (*n* = 33)

Type of Support	Reporting, *n*	Reporting, %
Educational programs to enhance knowledge	31	94
Budgeted nurse research position	28	85
Research council or committee	29	88
Stated mission related to research	27	82
Research institute in or affiliated with institution	25	76
Budget for nursing research program	21	64
Programs to enhance use of research	18	54

Table 5 Sources of Funding for Nursing Research Projects (*n* = 33)

Source of Funding	*n*	%
Organizational budget	23	70
Foundation	22	67
Nursing specially organizations	17	51
General Clinical Research Center	14	42
Federal	11	33

Table 6
Strategies Institutions Used to Increase Nursing Research Activity (*n* = 33)

Strategy	*n*	%
Involve the beside nurse in research	29	88
Staff nurses supported in developing research project from clinical questions	28	85
EBP educational seminars	27	82
EBP as part of clinical ladder	26	79
Staff educations seminars focused on research	24	73
Participation in research as expectation for staff nurses	20	61
Staff scholarships to conduce/participate in research	12	36

Table 7
Strategies Respondents Identified as Contributing to the Success of the Nursing Research Program (*n* = 33)

Strategies	Endorsed by Participants, *n*	Endorsed by Participants, %
Visibility and availability of NR to staff	22	67
Formal structure of nursing research position	21	64
Conducting studies meaningful for bedside nurse	21	64
Educational opportunities for staff RN in regard to research	19	58
Developing multilevel relationships	19	58
Clear vision and goals	17	52
Budgetary support for clinical research services	16	49
Targeting research projects to match institutional goals and priorities	14	42
Including nursing staff in conduct of research studies	13	39
Conducting quality improvement activities	8	24
Communicate concrete outcomes to nursing organization leader	8	24
Starting a research program with highly visible research	4	12