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Strategic Planning for Research Use in Nursing Practice

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Abstract

Background/Objective:

To prepare for a culture change to integrate research utilization into daily nursing practice, the authors conducted a descriptive survey of all registered nurses (RNs) in an integrated healthcare delivery system. The purposes of this study were to assess RNs' knowledge, attitudes, and practices (KAP) of nursing research activities, assess factors that support a research environment, and determine facilitating and challenging factors related to conducting regional nursing research.

Methods:

A 33-item survey based on the Iowa Model for Evidence-Based Practice was developed, validated, and determined to be reliable by the authors. Site coordinators organized and managed the orientation, administration, and collection of data from the 2,736 registered nurses who worked in 6 hospitals, 65 affiliated clinics, and 3 business units. Narrative notes taken by study investigators were analyzed for themes to determine challenging and facilitating factors for conducting regional research.

Results:

Education and job title significantly predicted knowledge and ability to perform research activities but was not related to willingness to engage in research activities. Several environmental factors were associated with knowledge of, willingness to engage in, and ability to perform research utilization activities. Challenging and facilitating factors to conducting regional research were identified.

Conclusions/Implications:

Our research environment is changing to value research as shown in the philosophy, conceptual framework, and bylaws for the professional nursing staff. Novice-to-expert research utilization expectations are included in the promotional model for nursing. All RN job descriptions and the annual performance tool were revised to include responsibilities related to research activities. The Iowa Model for Evidence-Based Practice was adopted as the method for creating practice validation and change. Train-the-trainer educational and experiential sessions are being designed for nurse leaders; all new RN employees complete a self-assessment tool of research utilization knowledge and the nursing division strategic goals incorporate research utilization expectations. The elements of this plan may be useful for nurse executives.

Healthcare systems are restructuring throughout the world and within the United States. These changes are occurring to better meet the evolving healthcare needs of the population through cost-effective approaches.

Within the United States, emerging organized healthcare systems require research related to patient care outcomes and the health systems that can best address them.

In 1997, Aurora Health Care (AHC) restructured into regionally organized healthcare delivery systems to better serve the communities throughout eastern Wisconsin. Our goals are to provide quality and service for patients, greater value for healthcare payers, and strong leadership roles for physicians. Our objectives are to better integrate the care within the regions, strengthen the leadership role of physicians with other healthcare professionals, enhance our responsiveness to customer needs, and improve the cost-effectiveness of our services.

During this same period, healthcare staff members from AHC created a 5-year strategic plan for nursing research based on Aurora's corporate strategic plan. Once fully implemented, the plan is expected to yield revised research-related policies; patient care and organizational interventions; ethical and practice guidelines; clinical decision support systems; educational packages and media; skilled nursing researchers; research networks and information systems; communication of research; information systems; and university research content.¹

The Study

One of the start-up activities of the 5-year plan was the development of a baseline assessment of nurses' knowledge, attitudes, and practices (KAP) related to research. To conduct this study, a work group was created, consisting of 11 nurses from the five regional hospitals and the home healthcare agency. The overall purpose of the study was to assess nurses' research KAP. The study's results would be used to provide feedback to individuals and to strengthen nursing research competencies.

Research Questions

We wanted to know:

1. What is the current level of nurses' research KAP?
2. Which personal and demographic factors are related to nurses' research KAP?
3. What are facilitating and constraining factors relating to conducting research in AHC?

Theoretical Framework

This study is based on a theoretical framework that combines Ford's² motivational systems theory with Bandura's self-efficacy theory.³ Ford's motivational systems theory states that motivation provides the psychological foundation for the development of human competence in everyday life. Bandura's self-efficacy theory emphasizes that cognitive processes mediate change but cognitive events are induced and altered most readily by the experience of mastery arriving from effective performance. The combination of Ford's concept, motivation (the drive to succeed), and Bandura's concept, self-efficacy (the self-confidence to persist), led us to the question, "Can we create an operational environment that produces and supports clinical nurses whose practices are research based?" We believe that nurses can consciously weave research into the fabric of their daily practice if a responsive environment supports their own goals and feedback is consistent with these goals. Competence in research utilization also occurs in a responsive environment in which all nurses receive mentoring and practice toward mastery ([Fig. 1](#)).

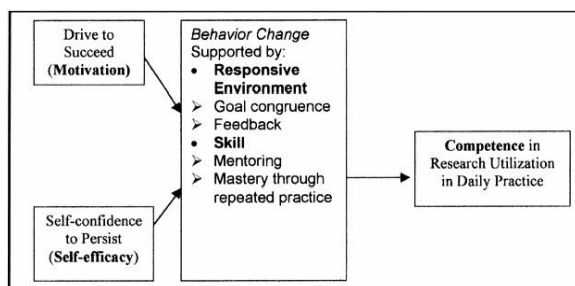


Figure 1: Creating competence in nurses' use of research throughout an organized healthcare delivery system. © 1999, Aurora Health Care, Milwaukee, WI. Used with permission.

Significance of the Study

This study is important because nurses increasingly are expected to incorporate research into their everyday practice and need feedback regarding their research competencies as a basis for change. We realized that the conduct of this study would help us to learn how to target continuing education interventions as one component of our strategic plan for nursing research in AHC.

Methods

Research Design

This study was a baseline, one-event, cross-sectional descriptive survey of nurses' KAP.⁴ Subsequent studies using representative samples will be conducted at 3 and 5 years.

Setting

The setting included the affiliates of the Metro Region of AHC; specifically, 5 hospitals, 13 healthcare centers, 11 medical group practices, 8 eight clinics, 2 rehabilitation centers, 3 home healthcare offices, and 1 free-standing surgical center. The setting was in a state of flux during the months of data collection, as is typical in newly formed organized delivery systems.⁵ For example, one hospital consolidated approximately 1,000 nurses from two campuses into one campus. At the psychiatric hospital and long-term care facilities, the nurse administrator positions were vacant during the study period. One hospital and the Visiting Nurses Association of Wisconsin were under accreditation review. Also, throughout the Metro Region, nurses were undergoing transition into a consistent professional practice developmental model for promotion.^{6,7}

Sample

The population for the study included all 2,736 registered nurses (RNs) who were employed in the aforementioned sites and had completed their 90-day probationary period as of May 1, 1998. The population was identified from the human resources database and confirmed for accuracy by the unit managers or clinical nurse specialists.

The final sample included 1,007 (37%) of the nurses in AHC's Metro Region. Of the respondents, 746 RNs (77%) were staff nurses and 512 (55%) had bachelors degrees in nursing. Eight hundred fifty-nine (83%) of the respondents were employed in hospitals, 98 (10%) worked in the home healthcare agency, and 50 (3%) worked in ambulatory clinics. The respondents' ages ranged from 22 to 75 years (average = 41.4 years). The average number of years worked in nursing was 17.3, with a range from 0 to 54 years. The average number of hours worked was 0 to 99, with an average of 64.7 hours per pay period. The clinical nurse specialist (CNS) and manager roles were salaried positions, whereas staff nurses were primarily hourly positions.

The CNSs were required to have a masters degree or be enrolled in an educational program leading to a masters degree. Of the 34 CNSs who responded, 11 (32%) had bachelors degrees and 20 (59%) were masters prepared. Although the 71 managers who responded had no educational requirement for their role, 44 (62%) had a bachelors degree and 14 (20%) were masters prepared.

Data Collection Instruments

We designed the data collection instrument (KAP Survey©) to be a pencil-and-paper survey. The instrument assesses 33 research activities that an RN encounters in clinical practice, including the conduct and utilization of research. Research utilization activities included identifying a clinical problem from practice experience, critiquing research literature for use in practice, and designing research-based nursing practice interventions. Research conduct activities included developing a research proposal, finding the right data collection instruments, doing a pilot study, and analyzing the data. For each item, the nurse self-reports whether his or her knowledge, willingness to engage, and ability to perform each activity is low, medium, or high. Also, we took notes during study meetings of our perceptions of challenges in conducting this study in the newly formed Metro Region and successful strategies used to overcome the challenges.

Instrument Development

A scannable form of the KAP Survey© was created using Teleform® (Teleform V5.0, Cardiff Software, Carlsbad, CA, 1997) to enable rapid, accurate data entry. Three expert nurse researchers who taught nursing research assisted in establishing content validity for the survey. After modifications, an index of content validity of 0.85 was estimated. Eighteen nurses from one hospital and two nurses from one home care agency similar to, but not included in, the Metro Region completed the KAP Survey© twice within a 1-week time period to determine the reliability of the instrument. The test-retest reliability indices of the KAP subscales were 83%, 81%, and 77%, respectively. The internal consistency of the KAP subscales were 0.94, 0.97, and 0.93, respectively. The instrument was easy and inexpensive to use because of its ability to be scanned.

Procedure

The institutional review boards of AHC reviewed and approved the proposal. Where no institutional review boards were functioning, executive management approved the proposal.

Site coordinators ensured a final and complete roster of nurses in their respective areas. They also publicized the purpose of the survey, ensured complete collection, security, and transfer of data between respondents and the center, and participated in publicizing the results of the study to the nursing community.

Each nurse received a packet with a cover letter and the instrument from their site coordinator. Participants completed the surveys and returned them to the Nursing Research Center through interoffice mail. One hospital chose to give a snack to those who turned their surveys into the Nursing Research Center.

Data Management

When the surveys were received, they were scanned into a database using Teleform® software. Data verification procedures were followed to ensure the accuracy of the data-entry process. Frequencies of variables were summarized and inspected for invalid responses. Any discrepancies were compared with the actual survey forms, and the database was corrected. A random sample of 20% of the surveys was selected and visually compared with the data entered in the database to ensure data-entry accuracy. Systematic data-entry errors were corrected throughout the database. During data management, the respondents were identified by their employee identification number so that employees could receive an individualized summary of their responses in comparison with the aggregate responses of their site or product line, or both. These numbers also will be

used for identification purposes in comparative studies done in subsequent years to measure changes in research activity over time.

Data Analysis

Survey Data

We used descriptive statistics to summarize the personal and work characteristics of the respondents and the factors that they perceived affected their experiences in conducting and using research. In addition, we used inferential statistics to examine the relationships between these characteristics and factors in relation to the KAP scores.

Research Process Data

Notes of study challenges and successful strategies were content-analyzed for consistent themes. Group consensus was used to validate the major themes.

Results

Nurses' Knowledge, Attitudes, and Practices of Research Activities

As expected at this baseline measurement, most nurses in the Metro Region indicated that their research knowledge was low. Specifically, 566 RNs (57%) ranked themselves as low in knowledge, 332 (34%) indicated that their knowledge was moderate, and 90 (9%) indicated that it was high. Similarly, 460 (47%) indicated that their ability to perform research activities was low, 405 (42%) indicated that it was moderate, and 108 (11%) indicated that it was high. However, 318 (32%) indicated that their willingness to engage in research activities was low, whereas 437 (45%) indicated that it was moderate, and 223 (23%) indicated that it was high.

Factors That Predicted Nurses' Knowledge, Attitudes, and Practices of Research Activities in the Metro Region

As anticipated, the profiles of self-reported research activity patterns differed by roles and education. Specifically, CNSs reported having more knowledge, willingness, and ability to participate in research activities than did staff members or managers. For example, 30 (88%) nurses in CNS roles indicated that their knowledge of research activities was moderate to high, 34 (100%) indicated that their willingness to engage in research activities was moderate to high, and 32 (94%) indicated that their ability to perform research activities was moderate to high. Managers most frequently reported moderate knowledge (N = 34, 48%), moderate willingness to engage in research activities (N = 37, 52%), and moderate ability to perform research activities (N = 35, 50%).

We also found that the profiles of research activity patterns differed by education. Nurses who were educated at the masters level self-reported having greater knowledge ([Fig. 2](#)), willingness to engage ([Fig. 3](#)), and ability to perform ([Fig. 4](#)) research activities. As expected, nurses with bachelors degrees self-reported more moderate and high knowledge and ability to perform research activities than did those at the diploma or associate degree level. However, there were no differences in willingness to engage in research activities among these three groups.

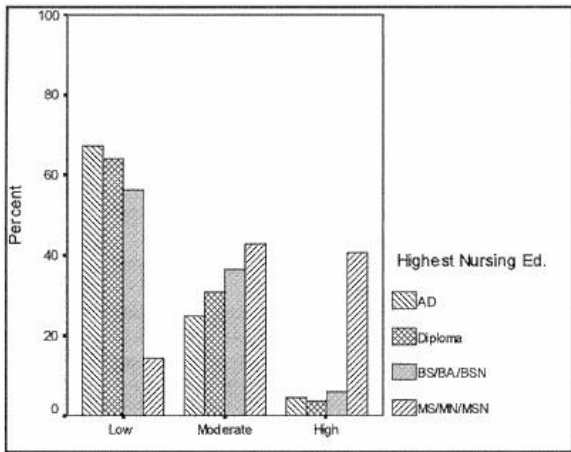


Figure 2: Comparison of nurses' responses to knowledge of research activities by education. © 1999, Aurora Health Care, Milwaukee, WI. Used with permission.

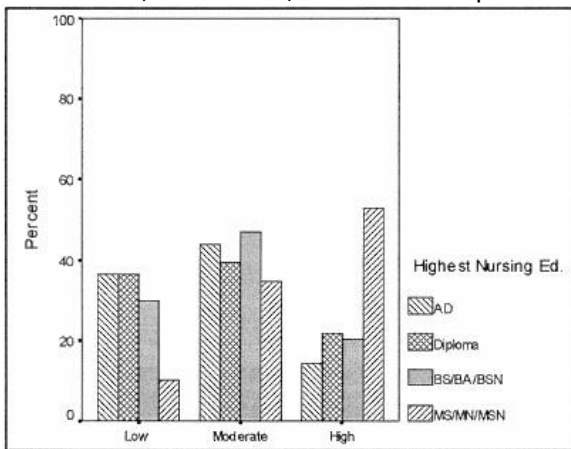


Figure 3: Comparison of nurses' responses to willingness to engage (attitudes) in research activities by education. © 1999, Aurora Health Care, Milwaukee, WI. Used with permission.

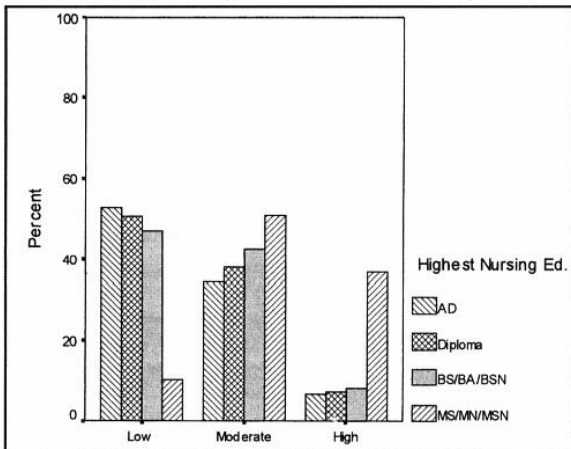


Figure 4: Comparison of nurses' responses to ability to perform research activities by education. © 1999, Aurora Health Care, Milwaukee, WI. Used with permission.

Interestingly, the profiles of research activity patterns did not differ by site even though two of the larger hospitals had nursing research committees for the past 20 years. The other sites did not have nursing research committees because of lack of resources.

Challenges in Conducting Research in an Organized Healthcare Delivery System

Three barriers had to be overcome to conduct regional nursing research in this study. First, it was challenging to obtain a list of all facilities that were considered part of the Metro Region. The study was initiated only 3 months after the reorganization. We obtained lists from administrators, but our conversations with the administrators helped us to understand that not all organizations were represented accurately on each list. Also, some organizations were merging, some closing, and some opening during the study planning phase. Constant communication with administration enabled an accurate list to be generated.

Second, it was difficult to identify all RNs who worked in the newly reorganized region. Some of the data were incomplete because of recent staff changes, and data that were complete had to be merged into one format for analysis. Site coordinators at each site provided correct lists of nursing staff to the Nursing Research Center staff. These lists were used to merge the data files from each site once they were complete. Fortunately, the Nursing Research Center had the staff competencies and technology necessary to complete these operational steps.

Finally, some staff members were distrustful of the ways in which the study findings would be used. Staff members were experiencing significant change throughout the reorganization, such as new administrative and management staff, expectations to standardize care across sites, and new awareness of the need to be cost-effective and to provide evidence-based care. These changes caused staff members to question how the information would be used, whether merit increases would be based on one's research activities score, and what would happen if one's scores were low. Frequent two-way communication between administrators, managers, staff, and study team members helped allay some anxiety. This communication emphasized that the results would be used in strategic planning by shared governance leaders and as a basis for self-improvement.

Strategies to Overcome Challenges in Conducting Regional Nursing Research

Several strategies facilitated our being able to collect data from a population of more than 2,700 nurses in June 1998, have organizational and site reports ready for distribution by September 1998, and have unit and individual reports ready for distribution by November 1998. First, having an organizational strategic plan for nursing research provided the rationale for the study. Administrators from each site were eager to support the creation of data collection systems to gather data across sites to determine a composite view and for benchmarking purposes. The study team was composed of staff nurses, CNSs, managers, and Nursing Research Center staff. Thus, all groups who potentially would be affected by the results influenced the design of the study so that the results were meaningful when presented at strategic planning.

The Nursing Research Center, funded partially by operations dollars and partially by an endowed chair position, was instrumental in providing the necessary, timely research design and technical expertise in data management. The scanning software, Teleform[®], enabled the study team to rapidly design a customized, accurate data collection tool.

A Wisconsin Advanced Telecommunications Foundation grant jointly obtained by the Nursing Research Center and the Information Services department in 1997 provided videoconferencing capabilities between all Metro Region sites. This communication capability enabled members from distant organizations to participate in team meetings without traveling.

We also recognized that the organizational culture has emphasized collaboration and systems thinking since the start of reorganization. The study team encountered considerable cooperation from departments and sites that only recently were integrated into the organized delivery system. In addition, study team members were enthusiastic and pleased to be a part of a research team that had the ability to create and use new systems and skills. This enthusiasm enabled us to address successfully the challenges of conducting this study across multiple settings and sites.

Discussion

Team representatives presented the results of this study to the nursing leaders in the shared governance structure during their strategic planning meeting. The leadership again underscored research utilization as essential to creating evidence-based practice. Leadership already had directed that research utilization be an expectation for all nurses but realized that change needed to be targeted to key groups and structures. [Figure 5](#) summarizes the educational, accountability, and structural changes that the governance council made in regional policies during and after the research results were presented. These changes create the infrastructure to implement the 5-year nursing research strategic plan.

Figure 5: Educational, accountability, and structural changes in regional policies. © 1999, Aurora Health Care, Milwaukee, WI. Used with permission.

Education

•Orientation

- Complete a research utilization self-assessment
- Review the shared governance council accountabilities to create evidence or research-based decisions
- Review the algorithm for research utilization
- Review research utilization behaviors expected throughout the novice-to expert continuum of the professional practice development model
- Review research utilization competencies found in the annual performance review tool
- Become familiar with reverences in using evidence to guide practice
- Visit the Nursing Research Center web site
- Visit the Aurora Health Care Medical Library
- Discuss a development plan for research utilization with unit-based research mentors
- Complete a post-test about research utilization

•Continuing Education

- Complete a research utilization project with mentoring from unit-based research mentors (CNSs, managers, or staff with research utilization experience) or staff from the Nursing Research Center
- Create research-based regional nursing practice policies and procedures based on evidence
- Create systems to assure integration of behavior change in daily practice

Accountability

•Each nurse (staff, managers, directors, CNSs)

- Identify opportunities to improve practice
- Use research in daily practice

•Each council

- Base decision-making on research or best practice evidence and cost/benefit analyses
- Create and implement research agenda for five-year strategic plan

•Nursing Research Center

- Support regional and site-based work through education and experiential learning opportunities
- Generate grant funds
- Administer the research budget to implement the research agenda

Structure

- Create a regional nursing personnel minimum data set
- Create a regional newsletter and intranet
- Use the videoconferencing capabilities to promote regional information sharing
- Collaborate with local universities to establish research utilization competencies of new graduates

Education

An educational plan in two phases currently is in use. The first phase is required of all nurses who are on orientation. Phase I education includes completing a self-assessment tool of research utilization behaviors by demonstrating one's understanding of how research creates the foundation for nursing practice within the Metro Region. The orientation process expects the newly hired nurse to seek out unit-based, site-based, and regional research resources and create a personal development plan for research utilization with a unit-based research mentor. Phase II education includes workshops in which groups are mentored in using research to develop policies and procedures to assure evidence-based practice.

Accountability

The nurses' accountability for using research and for identifying the need to conduct research was integrated into the expectations of each shared governance council and into each nurse's job description. Annual performance review criteria were standard across the region and included the expectation that each nurse acknowledges and incorporates research or evidence-based knowledge into daily practice. Novice-to-expert research utilization behaviors were incorporated into the Metro Region Clinical Practice Developmental Model.

The Nursing Coordinating Council was accountable for establishing and implementing the annual research agenda for the region to fulfill the 5-year nursing research strategic plan. It is expected to do this by developing regional policies and procedures and conducting cost/benefit analyses of best practice recommendations. The Nursing Research Center is accountable for supporting regional work groups through education, consultation, and data management, generating grant funds, and administering the research budget to implement to the metro-wide nursing research agenda.

Structure

Several structural changes are being implemented or investigated as a result of the study findings. The leadership recommended the creation of a regional nursing personnel database to facilitate communication with and development of all nursing staff. Willingness to be a research mentor will be included in the database. Because communication is so essential, a Metro Region nursing newsletter and a regional nursing Intranet were created. Calls for research and research utilization project work group members, abstracts, grant opportunities, research findings, and research conferences are included in the Metro Region newsletter and posted on the Nursing Research Web site in the Intranet.

New videoconferencing systems are being installed to expand the interconnectivity of regional Aurora sites. Additional grant funding is being sought to fund more sites and to upgrade older equipment. These networks will enable the planning and dissemination of research projects throughout the region. Collaborative relationships with local schools of nursing are being developed so that educators prepare students to use research as the foundation for their practice and to expect that their colleagues already in practice do the same.

Summary

Nurse executives are challenged to integrate research use in daily nursing practice. We have described the beginning implementation of a strategic plan to increase nurses' knowledge, attitudes, and ability to perform research activities. Our infrastructure currently is in place. Because of the restructuring activities, availability of research resources, clarification of expectations, compensation program, and interest sparked by this integration process, 50 nurses participated in 10 research utilization or research projects in 1998. These projects demonstrated improved patient outcomes of function, comfort, cost, and satisfaction. We expect nurses' participation to increase over time, which will continue to translate into cost-effective improved patient outcomes.

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