Delphi Survey of Nursing Research Priorities

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Purpose/Objectives: To identify oncology nurses' priorities for topics and issues to be addressed by developing a clinical nursing research program at a large comprehensive cancer center.

Design: Delphi survey, completed in two rounds.

Setting: A large comprehensive cancer center in the southern United States.

Sample: All 1,500 RNs employed at the cancer center. Round I asked nurses to identify topics they believed needed to be studied, and 642 nurses responded. In round II, 567 nurses ranked these priorities.

Methods: Surveys were distributed to all nurses who work in a variety of settings at the cancer center. Open-ended responses from round I were content analyzed, round II rankings of importance were described, and factor analysis was performed.

Main Research Variables: 120 topics were identified from a content analysis of research areas described by nurses in the cancer center.

Findings: 120 research priorities were identified. Factor analysis revealed three factors: clinical care, nurses and skills, and administrative aspects.

Conclusions: The top five research priorities identified at the cancer center were, in rank order, acute and chronic pain, infection rates and control, job satisfaction, nurse-patient ratios and staffing, and nurse retention. This study's survey included items similar to those on the recently conducted Oncology Nursing Society research priority survey. Pain and issues with infection were among the top five priorities in both surveys.

Implications for Nursing: Conducting a survey to identify nurses' perceptions of research was useful in involving nurses in the conduct of research, and the results were useful guides to beginning a coordinated program of nursing research.

Key Points . . .

➤ Conducting an institutional Delphi survey is a useful way to involve nurses in research and guide future studies.

➤ The top five cancer center priorities were, in rank order, acute and chronic pain, infection rates and control, job satisfaction, nurse-patient ratios and staffing, and nurse retention.

The development of a clinical nursing research program requires coordinated studies to build the scientific knowledge base for nursing practice. Although a great deal has been written by nurses in academic settings about the need for programs of research, literature about the conduct and use of research in clinical settings is more recent. Defining research priorities is an essential initial step in establishing a coordinated base for nursing research. The mission statement of a large comprehensive cancer center in the southern United States includes this phrase: "to eliminate cancer and allied diseases . . . by developing and maintaining integrated quality programs in patient care, research, education, and prevention." The director of applied nursing research, with the Nursing Research Council, established the need to assess the research priorities in oncology nursing to provide a basis for clinical practice, education, and research and to demonstrate support of the institution's mission.

The use of the Delphi survey in establishing priorities is well documented in the literature. It elicits judgments from experts for the purpose of short-term forecasting and planning (Shortridge et al., 1989). Named for the Greek oracle at Delphi, from whom the Greeks sought advice about the future, the Delphi technique first was used by Olaf Helmer and Norman Dalkey in 1953 at the RAND Corporation to obtain a consensus of experts when addressing military planning. The technique became popular when it was used a decade later for large-scale technologic forecasting and corporate planning (Helmer, 1983). Delphi surveys now are used to identify and prioritize a range of views on a variety of topics in a number of disciplines. For example, Atwal and Caldwell (2003) used a Delphi study of occupational therapists to reach consensus about discharge planning. McBride, Pates, Ramadan, and McGowan (2003) also used a Delphi survey to elicit strategies used by community pharmacists to reduce over-the-counter drug misuse. Other Delphi surveys were conducted by Schopper, Ammon, Ronchi, and Rougmont (2000) and Schneider and Dutton (2002).

Studies using the Delphi method to establish nursing research priorities have been completed in a variety of settings in Hong Kong (French, Ho, & Lee, 2002) and several countries, including Australia (Barrett, Kristjanson, Sinclair, &

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Hyde, 2001; Chang & Daly, 1998; Monterosso, Dadd, Ranson, & Toye, 2001; Yates et al., 2002), China (Yin et al., 2000), Korea (Kim, Oh, Kim, Yoo, & Ko, 2002), and Spain (Moreno-Casbas, Martin-Arribas, Orts-Cortes, & Comet-Cortes, 2001). Specialties studied have included nephrology (Hoffart, 1995; Lewis et al., 1999), gastrointestinal disorders (Griffin-Sobel & Suozzo, 2002), trauma (Bayley, Richmond, Noroian, & Allen, 1994), pediatrics (Broome, Woodring, & O'Connor-Von, 1996; Schmidt, Montgomery, Bruene, & Kenney, 1997), pediatric oncology (Fochtman & Hinds, 2000; Hinds et al., 1990, 1994), vascular nursing (Hatton & Nunnelee, 1995), public health (Misener, Watkins, & Ossege, 1994); postanesthesia (Heffline et al., 1994), and palliative care (Chang & Daly; Daniels & Howlett, 2001). Five additional surveys focused on oncology nursing research priorities. Bakker and Fitch (1998) surveyed Canadian nurses, and the Oncology Nursing Society (ONS) has sponsored four surveys (Funkhouser & Grant, 1989; Mooney, Ferrell, Nail, Benedict, & Haberman, 1991; Ropka et al., 2002; Stetz, Haberman, Holcombe, & Jones, 1995).

Surveys of this nature had not been conducted at this large comprehensive cancer center to the authors' knowledge, although they have been conducted at other institutions as described previously. The purpose of administering a Delphi survey was to enable nurses providing patient care to voice their views of nursing research needs. This encourages nurses to view the research topics with some sense of ownership and appreciation for application in individual areas of interest. The analysis of the Delphi survey identified major foci for nursing research at this institution to allow integrated quality programs in patient care, research, education, and cancer prevention to evolve in an organized manner.

Methods

A Delphi survey was done in two rounds to survey all nurses about oncology nursing research priorities. The director of applied nursing research developed a team that included members from the Nursing Research Council and other nurses and enlisted the support of biostatisticians.

Procedures

A major challenge at this institution was obtaining participation from the 1,500 nurses who work in a variety of settings. The research council formed a team of expert and novice researchers to plan the project, including data collection strategies that would allow participation to be maximized. Nurses new to the research process had the opportunity to learn from those with more experience. After obtaining institutional review board approval, the research team members met with various groups to talk about the project and reasons for conducting the study. Support from the council and vice president for nursing practice was obtained to offer incentives to encourage participation. Each nurse received a candy bar when a completed survey was returned, and each name was entered in a drawing for a gift certificate from a local medical bookstore. Because of the low-risk nature of this study and to further ensure anonymity, nurses did not sign an informed consent form. Data collection instruments for both rounds of the study had a statement at the top describing the purpose of the research and noting that completing the forms implied consent.

The nurse manager of each nursing unit and each clinic area identified a nurse to serve as a "data collection coordinator," who became known as a DCC (or, more often, a "candy person"). Data collection was overseen by a research assistant who periodically called the DCC to get an update and help with any problems. Each DCC received a packet containing a brief explanation of the Delphi survey and its purpose, flyers to post at nurses' stations and in nurses' lounges, Delphi surveys with attached prize coupons for each nurse employed in that area, data collection instructions, the research assistant's contact information, and a box of candy bars. The DCCs distributed the surveys to the nurses in their area. Upon completion of the survey, nurses filled out the attached coupon, removed it from their survey to ensure anonymity, and returned the survey and the coupon to their DCC in exchange for a candy bar and an opportunity to win a gift certificate. The DCC then returned the completed surveys and coupons under separate cover to the research assistant, who entered the results of the surveys into a database for analysis. The coupons were placed into a drawing at the close of each round, and the research team became the "prize patrol," delivering prizes to winners in their work area during their shift. The research team sent the DCCs and their nurse managers a letter that could be kept in their employee file thanking them for their participation.

Instruments

Surveys in round I obtained demographic data and asked nurses to write responses to the open-ended question, "Identify patient care problems or issues in oncology nursing that need to be studied by nurses at [this institution]. If you need additional space for your ideas, please use the back of this paper." In round II, nurses were asked to rate the importance of the 120 items generated from the analysis of round I. Items were rated on a scale of 1 (extremely important) to 5 (not at all important).

Data Analysis and Interpretation

Descriptive statistics were used to summarize demographic data. The research priorities were subjected to content analysis to summarize the content of the nurses' list. This content analysis was completed by two nurses; one of these nurses had extensive prior experience with qualitative analysis. The nurses did a line-by-line analysis of the responses by labeling each line and then sorting the items by label (Cohen, Kahn, & Steeves, 2000). The nurses worked separately and then discussed and compared their coding until agreement was reached. A third nurse who had done qualitative research for her doctoral dissertation checked these categories by comparing them with the data from the nurses to ensure that the labels included and accurately grouped all responses. All nurses worked at the comprehensive cancer center, and one of them also had a primary appointment at a university school of nursing. The analyses resulted in 120 items.

In round II, nurses rated the importance of the priorities, and these ratings were subjected to descriptive statistics to determine their mean rating and standard deviation. In addition, responses from the ranking of these 120 items were subjected to an exploratory factor analysis using squared multiple correlations as prior communalities estimates. The number of surveys included in the analysis was 330 (237 out of 567 surveys had missing information; factor analysis only considers

complete questionnaires) (see Figure 1). The maximum likelihood method was used to extract the factors, and this was followed by a promax rotation. A scree test (Cattell, 1966) suggested three meaningful factors; therefore, three factors were retained for rotation (see Figure 2). The Kaiser's Measure of Sampling Adequacy test value was 0.95, indicating that the data were appropriate for the common factor model (Kaiser, 1970).

Because the survey was anonymous, the institutional review board did not permit the team to link the two questionnaires. However, the researchers believed that those who did not return the first survey were less likely to return the second one.

Results

Comparing the two groups with chi-square tests and t tests, depending on whether the characteristic was categorical or measured on a continuous scale, revealed that they differed only in that those who completed the questionnaire in round I had significantly longer tenure at this institution than those who completed the questionnaire in round II (see Table 1). Because the authors could not link the questionnaires from one round to the other, they could not conduct a paired analysis of these demographic characteristics.

Six hundred forty-two surveys (54%) were returned in round I, and 567 surveys (48%) were returned in round II. Most respondents in both rounds were clinical nurses (72% and 69% for rounds I and II, respectively), followed by advanced practice nurses (7% and 9%); instructors (1% and 1%); research nurses (10% and 10%); managers, directors, or supervisors (5% and 6%); and other jobs (5% and 3%). The demographics reflect those of the nurses employed at this institution.

Demographic features of those who completed the questionnaires were similar to those who submitted questionnaires with some items not rated. Chi-square tests and t tests were used to compare the two groups of respondents, as appropriate, and no statistically significant differences were found between the groups. Again, because the authors could not link the questionnaires from one round to another, they could not conduct a paired analysis of these demographic characteristics.

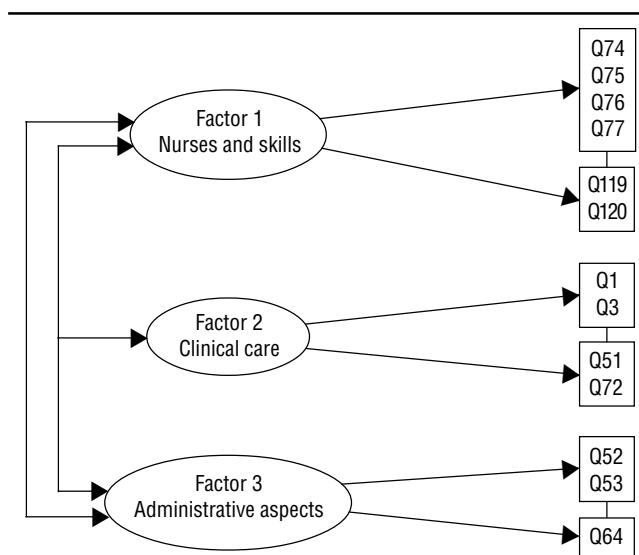The 120 research priorities from round II are rank ordered by mean scores and presented in Table 2. The mean scores ranged from 1.454–2.897 on a scale of 1 (extremely important) to 5 (not at all important). Acute and chronic pain was the priority rated as most important, closely followed by infection rates and control, job satisfaction, nurse-patient ratios and staffing, and nurse retention. Other symptoms, issues related to nurses, and administrative topics followed these items. The priorities rated as least important had a mean score of 2.8, which means that all items were rated as important.

In interpreting the rotated factor pattern, an item was said to load on a given factor if the factor loading was greater than 0.3 for that factor and less than 0.3 for the other factors (Stevens, 1996). Using these criteria, 46 items, question (Q) 74–Q120, except for Q103, were found to load on the first factor, which was named "nurses and skills." Items Q1–Q51 (except for Q2 and Q28–Q31), Q65, Q68–Q72 (except for Q70), were found to load on the second factor, labeled the "clinical care" factor. Seventeen items (Q27, Q34, Q52–Q64, and Q66–Q67) loaded on the third factor, the "administrative aspects" factor.

The eigenvalues for the three common factors were 97.6, 12.5, and 8.3, respectively. The proportion of variance accounted by each factor was 82.4%, 10.6%, and 7.0%, respectively, accounting for 100% of the overall variance.

Discussion

The results clearly indicated that nurses at this large comprehensive cancer center considered a very wide variety of nursing issues important to study. Indeed, no item was rated with a mean score that represented either "a little important" or "not at all important." In the clinical care factor, symptom control was rated as most important, including a variety of symptoms such as pain, nausea, vomiting, dyspnea, and fatigue. In the nurses and skills factor, communication, end-of-life issues, ethical dilemmas, job satisfaction, reducing turnover, stress management, and support all were rated as important. In the administrative aspects factor, staffing patterns and compensation issues were ranked as important.

When the authors reviewed the items identified in the first round of the survey, a nurse at the institution noted that the
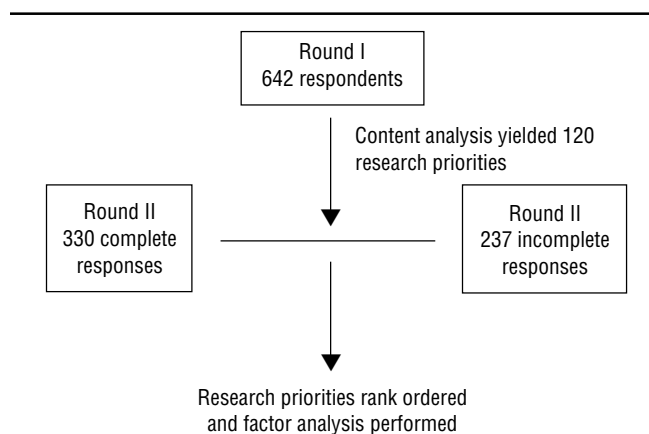

Figure 2. Path Diagram for the Three Oblique Factors Model
Q—question

Figure 1. Study Schema

Table 1. Delphi Study Demographics

Variable	Round I n (%)	Round II n (%)	Comparison of Round I to Round II p	Respondents With Complete Surveys, Round II n (%)	Comparison of Complete to Incomplete Respondents (Round II) p
Gender			0.493		0.946
Male	51 (8)	51 (9)		30 (9)	
Female	584 (91)	496 (87)		288 (87)	
Missing data	7 (1)	20 (4)		12 (4)	
Job title			0.481		0.520
Clinical nurse	460 (72)	389 (69)		231 (70)	
Advanced practice nurse	45 (7)	49 (9)		30 (9)	
Instructor	6 (1)	7 (1)		– –	
Research nurse	62 (10)	54 (10)		33 (10)	
Manager, director, or supervisor	31 (5)	31 (6)		19 (6)	
Other	33 (5)	18 (3)		11 (3)	
Missing data	5 (1)	19 (3)		6 (2)	
Highest level of education			0.250		0.985
Associate degree	159 (25)	114 (20)		69 (21)	
Diploma	56 (9)	56 (10)		31 (9)	
Baccalaureate degree	340 (53)	296 (52)		174 (53)	
Master's degree	72 (11)	73 (13)		44 (13)	
Doctoral degree	6 (1)	2 (0)		2 (1)	
Other	1 (0)	3 (1)		1 (0)	
Missing data	8 (1)	23 (4)		9 (3)	
Employment status			0.100		0.819
Full-time	587 (91)	512 (90)		299 (91)	
Part-time	40 (6)	31 (6)		16 (5)	
Other	6 (1)	14 (3)		10 (3)	
Missing data	9 (1)	10 (2)		5 (2)	
Years in nursing			1.000		0.394
$\overline{X}$	15.1	15.1		14.5	
SD	9.6	10.1		10.0	
Range	0.25–50	0–50		0–40	
Years at institution			0.038		0.416
$\overline{X}$	8.4	7.5		7.1	
SD	7.5	7.4		6.7	
Range	0–41	0–55		0–28	
Years in oncology nursing			0.497		0.331
$\overline{X}$	8.9	8.6		8.1	
SD	7.7	7.5		7.2	
Range	0–36	0–33		0–32	
Age (years)			0.711		0.362
$\overline{X}$	40.7	40.9		40.3	
SD	9.2	9.3		9.4	
Range	22–76	21–67		21–67	
Total number of responses	642 (100)	567 (100)		330 (100)	

Note. Because of rounding, percentages may not total 100.

priorities identified by the respondents included symptom management and job satisfaction issues and said that she believed what the respondents were saying overall was that they "want to know how to provide the best care to our patients and also want to know how to support ourselves doing it."

During the time this study was being conducted, ONS also conducted a Delphi study to prioritize research in oncology nursing (Ropka et al., 2002). The ONS survey polled 2,000 of its members and stratified the results by researchers and the general membership. In the authors' Delphi study, 1,500 nurses were surveyed with no stratification. The ONS survey respondents worked in many practice settings in different institutions, whereas the authors' survey was drawn from one large institution. The ONS survey was mailed and followed one week later by a postcard reminder. The response rate was 39%. DCCs assisted with data collection for the authors' survey and incentives were given. The current survey's response rate was 54% in round I and 48% in round II. The ONS team used research priorities from previous surveys so members could rank previously established priorities in one round. The ONS survey contained eight categories: cancer symptom management, behavioral and psychosocial aspects of cancer care, cancer care delivery systems, cancer continuum of care, cancer health behaviors, special cancer populations, cancer decision making, and cancer health services research. Analysis of the authors' survey suggested three factors: nurses and skills, clinical care, and administrative aspects. The authors' factors were more general, but the items prioritized are consistent

with the ONS categories. The authors' survey included more administrative aspects of care and nurses' skills and education, whereas the ONS survey was more focused on the continuum of cancer care.

The top five priorities from the ONS survey were, in rank order, pain, quality of life, early detection of cancer, prevention or risk education, and neutropenia or immunosuppression. The top five cancer center priorities were, in rank order, acute and chronic pain, infection rates and control, job satisfaction, nurse-patient ratios and staffing, and nurse retention. The top five priorities in both surveys included pain and infection control.

Institutional Dissemination

The findings of this survey were shared at the authors' institution in several ways. Results were presented at leadership meetings, staff meetings, monthly research lunch sessions, and the annual meeting of all nurses at the institution. In addition, the nursing quality improvement plan included the Delphi survey of nursing research priorities as an activity to promote growth in research, which was an aspect of the institution's strategic vision.

Implications for Research

Conducting the Delphi study in an institution with 1,500 RNs took planning and commitment from a group of nurses interested in conducting research. Obtaining nurses' participation and, thus, an adequate return of surveys required persistence and creativity. Serving as DCC for a unit was attractive to nurses because a part of each nurse's evaluation and development is participating in research. The DCCs were responsible for distributing the surveys, collecting them, and giving each participant a candy bar. The incentive candy bar and the drawings for prizes helped to improve the return rate of the surveys. When candy bars ran out, the study team had to quickly purchase more to keep up the momentum of the survey return.

Nurses in the clinical setting often believe that they do not have time to participate in nursing research. By dividing the study into small tasks and recruiting DCCs at the unit level, nurses were able to see that research can be done in ways that are feasible with their busy schedules. This study demonstrated that RNs at all levels could participate in parts of the research process. Collecting data from nurses in busy clinical areas was possible. Coordination by a research assistant who was able to devote full-time effort to the project for the periods of data collection helped to keep DCCs accountable at the unit level.

Although possible, integrating research into the clinical setting still remains challenging. Nurses are interested, but clinical needs take priority over research among clinicians. The role of nurse researchers may be looked at with suspicion, and concerns about clinical nurses feeling that research is designed to watch what they are doing long has been an issue (McBride, Diers, & Schmidt, 1970). Ensuring anonymity is very important, which was made clear in the current study by the number of nurses who were unwilling to provide demographic data because they feared that these data might be used to identify them. The role of clinical nurses as researchers or data collectors also creates dilemmas with role delineation (Robley, 1995). Nurses are working primarily to deliver care, which may interfere with collecting data. Sometimes nurses need to choose between collecting data and providing care.

Table 2. Rank Ordering of 120 Derived Research Priorities

Item	Label	X̄	SD
Q2	Acute and chronic pain	1.454	0.672
Q21	Infection rates and control	1.519	0.830
Q109	Job satisfaction	1.560	0.775
Q81	Nurse-patient ratios and staffing	1.591	0.849
Q105	Improving retention of nurses and reducing turnover	1.699	0.861
Q106	Salary inequities over time (e.g., "new" nurses make same amount as "old")	1.713	0.896
Q3	Nausea, vomiting, and antiemetic regimes	1.714	0.823
Q20	Drug toxicities	1.714	0.857
Q56	Patient understanding of options at end of life	1.802	0.887
Q108	Stress management for nurse (e.g., wellness, self-care, rest, support needs, humor, weight control, effects on patient care)	1.823	0.899
Q8	Dyspnea	1.854	0.935
Q27	Ways to support patients after "bad news"	1.856	0.802
Q54	Effective communication at end of life	1.856	0.909
Q67	Patient concerns about treatment	1.858	0.782
Q57	Patient understanding of advance directives	1.873	0.902
Q107	Institutional stressors	1.874	0.866
Q55	Ethical dilemmas faced by patients, families, and nurses at end of life	1.875	0.930
Q24	Nutrition	1.900	0.753
Q120	Consistency of care	1.905	0.905
Q23	Drug and fluid administration	1.910	0.900
Q83	Staffing patterns	1.911	0.965
Q26	Quality of life (e.g., in phase I and II trials, after limb salvage versus amputation)	1.912	0.888
Q78	Strategies to reduce medical and laboratory errors	1.915	0.975
Q52	Informing newly diagnosed patients regarding diagnosis, treatment, and side effects	1.918	0.916
Q1	Fatigue	1.941	0.851
Q58	Palliative care	1.941	0.913
Q74	Critical care issues	1.948	1.077
Q40	Patient privacy	1.960	0.961
Q9	Anxiety	1.964	0.816
Q10	Depression	1.984	0.829
Q66	Effective communication strategies	1.995	0.888
Q60	Supportive care and continuity of care	2.000	0.881
Q22	Economics	2.005	0.946
Q12	Stomatitis, mucositis, and mouth care products	2.013	0.873
Q61	Ways to enhance patients' understanding of informed consent and research protocols; futility; physician communication of realistic treatment goals	2.020	0.932
Q29	Coping and time spent with nurses, teaching, and length of treatment	2.028	0.852
Q103	Dealing with dying patients	2.028	0.930
Q59	Transition to hospice	2.030	0.922
Q97	Nurse-patient relationships	2.039	0.932
Q117	Developing expertise from novice to expert	2.039	0.942
Q115	Long-term effects on nurses giving chemotherapy	2.041	1.045
Q110	Longevity, or how long nurses work in oncology versus other specialties	2.053	1.001
Q73	Cognitively impaired patients and safety	2.061	0.960
Q4	Diarrhea	2.106	0.885
Q91	Staff education and certification	2.107	0.967
Q99	Nurses' scheduling	2.121	1.037
Q28	Image and identity issues	2.124	0.858
Q33	Psychological effects of treatment and survival	2.127	0.883
Q92	Strategies and content needed for staff education	2.127	0.894
Q75	Support systems	2.128	0.928
Q84	Telephone triage to identify emergencies, decrease costs by reducing emergency room visits	2.133	0.975

(Continued on next page)

Table 2. Rank Ordering of 120 Derived Research Priorities
(Continued)

Item	Label	$\bar{x}$	SD
Q18	Cognition changes with treatment	2.147	0.933
Q111	"Personality" in oncology nursing and success	2.154	1.014
Q31	Caregiver support issues	2.162	0.872
Q68	Long-term follow-up and cancer recurrence	2.163	0.866
Q118	Pressure, knowledge of staff, empowerment, and advancement	2.163	0.988
Q88	Preceptorships	2.174	0.979
Q65	Way to improve "compliance" and adherence	2.176	0.879
Q102	Grief and loss among nurses	2.185	0.968
Q86	Use of non-RN staff, delegation to aids, and contract staff: effects on patient outcomes	2.188	1.030
Q101	Describe what sustains nurses caring for patients with cancer (e.g., hardiness, resiliency)	2.189	1.008
Q44	Effects of teaching on outcomes, complications, patient satisfaction, and empowering	2.202	0.921
Q34	Fostering hope	2.207	0.904
Q64	Family unaware or in denial about a patient's condition	2.207	0.939
Q85	Effective change of shift reports	2.207	1.078
Q6	Skin care and integrity, disruptions, pruritus, mattresses, specialty beds, and use of lotions	2.212	0.971
Q43	Identify and monitor patient teaching and education	2.227	0.927
Q62	Family (after patient death)	2.242	0.952
Q72	Geriatric needs or concerns	2.243	0.960
Q104	Nurses' philosophy of death, dying, and afterlife	2.245	1.032
Q114	Nurses' attitudes (e.g., regarding symptom management, spirituality)	2.246	0.957
Q112	Identification of nurses by patients	2.251	1.032
Q77	Administration support	2.256	1.052
Q11	Phlebitis	2.268	1.003
Q116	Generational issues in nursing staff	2.271	1.048
Q96	Effective orientation (pathway)	2.273	0.978
Q14	Neuropathy	2.283	0.923
Q42	Prevention	2.289	1.058
Q13	Lymphedema	2.291	0.936
Q113	Perceptions of nursing roles within and outside of the profession	2.291	1.035
Q7	Sleep disorders, deprivation	2.293	0.906
Q100	Why nurses select this institution (are expectations met or unmet; predictors of fit for nurses here)	2.293	1.082
Q36	Cultural issues and beliefs	2.296	0.867
Q63	Decision making and family "interference"	2.302	0.929
Q5	Constipation	2.306	0.905
Q87	Barriers to nurse-patient and family relationships	2.314	0.932
Q71	Pediatric issues (e.g., growth and development, pain)	2.318	1.127
Q30	Spirituality and religiosity	2.322	0.904
Q90	Nurses' roles	2.327	1.011
Q41	Issues related to pregnancy before, during, or after treatment	2.331	1.002
Q51	Education with cognitively impaired patients	2.346	0.956
Q82	Patient profile system	2.363	1.057
Q46	Best preparation for self-care	2.379	0.938
Q47	Patient adherence to tests and appointments	2.383	0.956
Q35	Describe interventions perceived as "caring"	2.392	0.970
Q19	Sedation scales	2.415	1.015
Q93	Staff knowledge of research utilization	2.423	0.966
Q50	Teaching with language assistance	2.436	0.997
Q45	Documentation of teaching	2.439	1.012
Q16	Effect of protocols on cost and symptoms	2.464	1.096
Q119	Effects of ethical rounds	2.464	0.986
Q76	Administration	2.504	1.085
Q53	Complimentary therapies	2.508	1.049

(Continued in next column)

When nurses are providing care as well as collecting data from patients, patients may be concerned that the data they supply may alter the care they receive (Cohen et al., 2000). One way to avoid role conflict is for data to be collected by nurses who are not caring for the patients in the study. In addition, time for research needs to be built into staffing models, dedicated personnel are needed to coordinate research, and funding must be available.

The role of clinical nurses in conducting research and the dilemmas this poses need to be explored further. How can clinical nurses collect data and provide optimal care? When does nursing care supercede research? Recent nursing articles and text emphasize general research ethics. Examining ways for nurses to be involved in the conduct of research and determining if and how this affects the quality of the care they provide are important areas for future research.

Implications for Nursing Research and Practice

Conducting this survey and communicating the results have been useful at the authors' institution in a variety of ways. Since this survey was completed, nurses at the institution have conducted research and other projects that have been published or presented after abstracts were accepted by ONS for its annual Congress. Several projects that were designed and implemented addressed the major identified research priorities and sought better ways to provide nursing care. A few examples will illustrate this point. Nurses identified pain as the most important research priority, which was mirrored in the institution with an institutional effort to improve pain management. Institutional goals were set to have 100% of patients assessed for pain, a 25% decrease in the number of patients reporting moderate to severe pain, and a 50% increase in the number of patients receiving educational materials. Every unit participated in a project to achieve these goals, including improving pain management for patients on patient-controlled

Table 2. Rank Ordering of 120 Derived Research Priorities
(Continued)

Item	Label	$\bar{x}$	SD
Q48	Best strategies (e.g., video versus discussion, group versus individual, individualized versus standardized)	2.512	0.935
Q17	Patients' use of diaries to report side effects	2.525	1.006
Q49	Ways to improve home management preparation	2.527	0.928
Q32	Sexuality	2.546	0.928
Q69	Adjustment when off treatment	2.547	0.917
Q38	Cultural and economic diversity in screening and treatment	2.549	0.951
Q25	External tube (e.g., frequency of changes, urinary continence, pouches)	2.550	0.896
Q89	Cost of staff education	2.551	1.042
Q98	Effect of Internet on access to patient care	2.563	0.972
Q37	Incidence and mortality of cancers with ethnic variation	2.570	0.948
Q94	Documentation for staff education	2.606	1.015
Q95	Effects of staff education about diverse cultures	2.609	0.999
Q80	Better ways to allocate beds	2.732	1.090
Q79	Environmental effects, waiting room, and furniture	2.793	1.057
Q39	Staff gender matching with foreign patients	2.849	1.068
Q70	Visitation policy	2.855	1.125
Q15	Menopause	2.897	1.042

analgesia (Fogarty et al., 2002), conquering pain in the emergency center (Ho et al., 2002), and improving pain management for patients with cancer after thoracic surgery by using epidural infusions (Kan, Taubert, & Ly, 2003). A multisite survey of pain documentation was conducted that included data from this institution (Cohen et al., 2003).

Infection control, the second most important research priority, was addressed in a project that examined managing vancomycin-resistant enterococci in immunosuppressed blood and marrow stem cell recipients in the outpatient setting (Brannan & Gumabong, 2003). Several projects have looked at job satisfaction, including management behaviors associated with nurse retention (Owens, Quarles, Morrison, Espinoza, & Cohen, 2002) and ways to improve recruitment and retention on an inpatient blood and marrow transplant unit (Johnston et al., 2003).

Implications for Clinical Education

What the authors learned from the process led to a variety of educational activities. The Nursing Research Council has sponsored ongoing education. Classes about how to conduct literature searches were held to increase the skill level of nurses performing literature searches and sharing information about conducting searches with their colleagues. Mobile poster sessions, called "Posters on the Move," were created to rotate posters that have been presented at nursing conferences through clinical areas. This provided nurses with access to the information in their work areas. Post-tests were developed so that continuing education credits could be awarded. A monthly nursing research forum provided a way for nursing research and research issues to be presented and discussed.

Both Delphi surveys provided valuable information to guide the course of future oncology nursing research. Conducting an institutional survey is a useful way to involve nurses in research and to guide future studies.

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