

Deborah L. Volker, PhD, RN, AOCN
Joni Watson, MSN, MBA, RN, OCN
Heather Becker, PhD
Tiffany Scott, MSN, RN

Assessing Cancer-Related Learning Needs of Texas Nurses

KEY WORDS

Cancer
Continuing education
Learning needs assessment
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Background: Given the growing number of cancer survivors, all nurses must have current knowledge and skills to provide competent cancer care. Accordingly, access to evidence-based educational opportunities designed to promote ongoing competency must be ensured. Program offerings and services should be based on a systematic and periodic approach to provide appropriate programming that meets learners' self-identified needs, priorities, and self-reported gaps in existing knowledge and practice. **Objective:** The purpose of this article was to report the process and findings of a statewide needs assessment of cancer-related needs of nurses across all practice settings. **Methods:** A convenience sample of licensed nurses was recruited from throughout Texas to complete a learning needs assessment instrument. **Results:** Five hundred twenty-one nurses completed the survey. Results revealed several priority areas for educational programming, including clinical care topics, survivorship issues, tobacco cessation strategies, and clinical trials. Although results varied somewhat between oncology and nononcology nurses, both groups cited time constraints as the biggest barrier to integrating cancer-related knowledge and skills into their practice. **Conclusion:** Findings from the survey can be used to direct program priorities and approaches for ongoing educational services that promote delivery of competent cancer care. **Implications for Practice:** This approach to a cancer-focused needs assessment serves as an exemplar for nursing education leaders who are charged with developing and delivering cancer-specific programming for nurses.

Author Affiliations: The University of Texas at Austin School of Nursing, Austin (Drs Volker and Becker and Ms Scott); and the Nurse Oncology Education Program, Austin, Texas (Ms Watson).

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Correspondence: Deborah L. Volker, PhD, RN, AOCN, The University of Texas at Austin School of Nursing, 1700 Red River St, Austin, TX 78701 (dvolker@mail.nur.utexas.edu).

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According to the American Cancer Society,¹ approximately 1.5 million Americans will be diagnosed with cancer in 2010, and another 570 000 will die of the disease. As such, cancer represents the second leading cause of death in the United States. As the second most populous state in the United States, Texas has a particular interest in mitigating the effects of cancer on its residents. Whereas more than 440 000 Texans are cancer survivors, more than 100 000 new cases will be diagnosed, and about 36 000 people will die of cancer over the next year.^{1,2} To address cancer as a public health priority in Texas, the Texas State Legislature established the Texas Cancer Council as a state agency in 1985.³ The council was directed to develop and implement the Texas Cancer Plan, a statewide blueprint for cancer prevention and control. The plan identifies healthcare professional education and practice as 1 of 5 key areas crucial to reducing the burden of cancer in Texas.

To address cancer-related educational needs of all nurses in Texas, the Texas Nurses Association/Foundation established the Nurse Education Oncology Program (NOEP) with funding from the Texas Cancer Council in 1987. The NOEP's mission is to educate Texas nurses about all aspects of cancer prevention, detection, treatment, and survivorship and is now funded by the Cancer Prevention and Research Institute of Texas. To design educational services that meet nurses' needs, NOEP periodically conducts statewide needs assessments. Given that the most recent survey was conducted in 2000,⁴ a new survey was conducted in 2008–2009. Therefore, the purpose of this article was to report the findings of this survey and discuss their relevance for program planning for nurses in Texas and beyond. This work can serve as an exemplar for nursing education leaders who are charged with developing and delivering cancer-specific programming for generalist nurses.

■ Background

Given the prevalence of the disease and the growing number of cancer survivors, all nurses must have current knowledge and skills to provide competent care for these individuals. Indeed, although there are more than 3.1 million registered nurses in the United States,⁵ only 29 000 or about 1% are certified in oncology nursing.⁶ Although there is no national database that captures where cancer survivors receive their follow-up care (eg, ambulatory cancer care centers versus other primary care settings), more than 67% of US nurses work in hospital or long-term-care settings, whereas only 10.5% work in ambulatory settings of any kind.⁵ Thus, the nononcology nurse population plays a critical role in the provision of cancer care across the survivorship continuum. To promote state-of-the-science cancer nursing education, the Oncology Nursing Society formulated education practice standards designed to guide oncology content in associate, baccalaureate, and continuing education programs for generalist nurses across all care settings.⁷ The standards include recommendations for faculty qualifications, clinical and educational resources, curriculum content, application of teaching-learning

theories, and student outcomes. Despite these recommendations, most US programs do not adequately address cancer care within the curriculum.⁸ In Texas, nursing faculty members frequently report that cancer-related content may comprise only 1 to 2 hours within their courses on nursing care of patients with pathophysiologic disorders; however, other cancer content may be embedded in other courses such as physical assessment, healthcare ethics, or pediatrics.

Programs that prepare US generalist registered nurses do not have a mandate from accreditation bodies to include cancer-specific content within their curricula. For example, the Essentials of Baccalaureate Education for Professional Nursing Practice from the American Colleges of Nursing⁹ does not specify a need for programs to emphasize any particular disease process but rather focuses on the need for high-quality, safe, evidence-based patient-centered outcomes. Similarly, the National Council Licensure Examination for Registered Nurses Examination Test Plan¹⁰ outlines competencies focused on applying knowledge from the biologic, social, and physical sciences to nursing care activities. The test plan does not provide nursing faculty with any direction as to how much content or time should be devoted to a particular disease process. In essence, members of the faculty are left to determine curricular priorities based on their own beliefs about what students need to know.

A few US programs have implemented strategies designed to address deficiencies in cancer-related content and clinical experiences in the academic curriculum. For example, Mundt and colleagues¹¹ implemented a community partnership model designed to enhance nurses' knowledge of cancer care in the Louisville, Kentucky, metropolitan area. After completing a curriculum survey that revealed "limited" cancer-related content in 6 area nursing schools, the researchers developed and disseminated 3 videotaped seminars designed for use on both practice and academic settings. The study team also implemented a nursing faculty fellows program to promote inclusion of state-of-the-art cancer knowledge in academic curricula.¹² Although formative evaluation data revealed that the fellows' 4-week intensive seminar was well received by the participants, no data were reported regarding impact on their students' cancer-related knowledge and competencies.

To address the need to expand cancer care knowledge and skills among practicing, nononcology nurses and other healthcare providers, Smith and Lichtveld¹³ developed a Cancer Core Competency Initiative. Their initial activity focused on the development of core cancer competencies to guide basic academic, continuing education, and work-site training programs for nononcology providers. The authors recommended that individual program planners use the competencies to select topics and set priorities for training. Accordingly, in a report of pilot-testing the competencies, 4 organizations indicated improvement in program participants' cancer knowledge, skills, and attitudes.¹⁴ Learning needs assessment processes and outcomes were not reported. Instead, selected competencies for focused programming were based on each organization's self-identified priorities.

Unfortunately, nursing education programs outside the United States have similar deficiencies regarding inclusion of cancer care

in the curriculum. In a survey of oncology education in Canadian undergraduate programs, Cheung et al¹⁵ found that most nursing programs spent less than 1 week on cancer education, and only 23% of the surveyed schools had mandatory clinical experiences in oncology settings. Similarly, Kelly et al¹⁶ reported that most Irish preregistration nursing education programs report 5 to 25 hours allocated to cancer nursing content. Savopoulou¹⁷ surveyed undergraduate nursing education programs in 9 countries in the Balkans and the Middle East and reported that the amount of time allocated to cancer nursing content ranged from none (Macedonia, Turkey, and Yugoslavia) to 45 hours (Greece). Whereas Israel, Slovenia, and Greece had the most substantial oncology nursing education programs, the author concluded that the time spent on students' preparation in oncology nursing in the surveyed countries was insufficient to meet cancer patients' needs.

In summary, the preparation of nurses for cancer patient care must be improved. Once graduates leave the academic setting and enter the practice arena, they may not access continuing education programs focused on care for cancer patients and families and may not have current knowledge and skills to provide appropriate care and services. Accordingly, access to evidence-based educational opportunities designed to promote ongoing competency must be ensured. Program offerings and services should be based on a data-driven approach to provide appropriate programming that meets learners' self-identified needs, priorities, and self-reported gaps in existing knowledge and practice. Although nurses working in oncology settings are an obvious target for continuing education in oncology, all nurses need access to state-of-the-art oncology education. As such, our article reports the process and findings of a statewide needs assessment of cancer-related needs of nurses across all practice settings.

■ Methods

In 2008, a NOEP project team developed a survey to assess the educational needs of Texas nurses. Instead of adapting our 2000 survey for use in this project, we developed a new instrument based on needs identified by individual NOEP program participants, changing trends in cancer care, and clinical care issues identified by NOEP collaborators and constituencies throughout the state. The survey included 61 items that addressed perceived oncology knowledge, current cancer-related practices as well as barriers to practice, and background information. Topics for future educational offerings and preferred modes of delivery were solicited as well. Ecological and face validity of the survey was enhanced via expert review from 32 NOEP Steering Committee members, and other nurse educators and researchers with expertise in oncology nursing practice. Because the survey was not intended to evoke consistent responses from the same individuals over time, reliability estimates were not performed.

Data were collected between October and December 2008. E-mails were sent to those on its electronic mailing list of nurses who have indicated an interest in NOEP's educational offerings. The NOEP's Steering Committee was also

asked to encourage nurses to complete the survey. Those willing to participate in the study were provided an electronic link to the survey tool, which utilized the Expert Scan software and resided on the NOEP server.

The NOEP staff also made available a paper-and-pencil version of the survey to nurses attending educational conferences during the same 3-month period. Participants who completed the survey using this format completed the paper tool while attending a conference and then handed the survey back to a NOEP staff member. Both the electronic version and the paper-and-pencil versions of the surveys were identical, and the instructions for completing both surveys were identical. The NOEP staff scanned the completed paper-and-pencil surveys and entered them into the database of other surveys on the NOEP server. The voluntary nature of participation in this survey was emphasized in all contacts. Study participants were entered into a drawing for 1 of the 5 \$100 cash prizes as an incentive for participation.

The descriptive data statistics were generated by the Expert Scan software. An institutional review board for the protection of human subjects reviewed the project proposal and determined it to be exempt because it involved the study of existing data that were recorded in such a manner that the participants could not be identified.

■ Results

Sample Description

Five hundred twenty-one nurses completed surveys; 476 surveys were submitted online versus 45 paper-and-pencil submissions. A survey response rate could not be calculated because our varied recruitment strategies precluded our ability to determine the total number of nurses who had the opportunity to complete the survey. We chose not to compare responses between online participants versus paper-and-pencil survey participants because only 8.6% of the participants completed the paper-and-pencil tool. Furthermore, we had no theoretically based rationale for assuming that cancer-related learning needs of nurses could differ based on mode of participation in the study. Overall, 89% of the respondents were registered nurses, and 98% lived in Texas. Thirty percent had a BSN, and 27% had advanced degrees. Seventy-one percent of the respondents were between the ages of 45 and 64 years, whereas 24% were between 20 and 44 years old. Seventy-two percent had been practicing at least 16 years. Three-fourths of the sample was white; 12% were Hispanic, and the remainder was of other ethnic/racial groups.

Whereas respondents most frequently identified medical/surgical as their practice area, various other practice settings, such as oncology, geriatrics, school health/pediatrics, home health, hospice, public health, and schools of nursing, were also represented. Twenty-eight percent were staff nurses; 19% indicated they were supervisors or head nurses, whereas 17% indicated they were faculty/educators. Sixty-one respondents indicated they were advanced practice nurses. The sample also

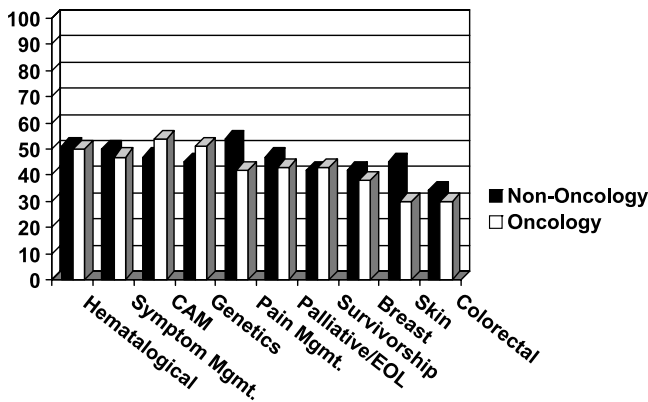


Figure 1 ■ Cancer education needs. Columns represent the percentage of respondents indicating they need to know more about each topic area.

included school nurses, office nurses, administrators, consultants, and researchers.

We assumed the knowledge, previous experiences, and therefore the educational needs of oncology nurses and generalist nurses would vary, and therefore, oncology versus generalist nurse status was considered the most salient grouping variable. Survey responses were compared for those who indicated they were oncology nurses (n = 167) and all other respondents (n = 380). The oncology nurses were most likely to indicate they were staff nurses (35%) or office nurses (23%), whereas the other nurses in the sample reported more diversity in their practice roles.

Educational Needs

Figure 1 shows the percentage of oncology and nononcology nurses who indicated that they need to know more about 10 oncology topic areas. The nononcology nurses generally indicated a greater need for most topics, with the exception of survivorship, complementary and integrative medicine, and genetics, where the oncology nurses were more likely to indicate a need for information. The discrepancies between the 2 groups in perceived need were greatest for skin cancer and pain management. That is, skin cancer was identified as a needed topic by 30% of the oncology nurses versus 45% of the nononcology nurses. Similarly, pain management was a priority topic for 42% of the oncology nurses versus 54% of the nononcology nurses. Eighty-one percent of oncology nurses, compared with only 55% of other nurses, agreed or strongly agreed that the oncology education they had received is adequate for their current practice role.

Survivorship

Ninety-two percent of oncology nurses, compared with 60% of other nurses, agreed or strongly agreed that they were adequately prepared to provide care to cancer patients or survivors. Eighty-five percent of all respondents agreed or strongly agreed that they were aware of the physical, psychosocial, spiritual, and economic consequences of cancer and impact on survivorship. As expected, the oncology nurses rated their awareness higher than

nononcology nurses, with approximately 95% agreeing they were aware in each of these areas. Both groups of nurses agreed that the following areas are essential when caring for a cancer survivor: summary of treatment, plan for follow-up care, recommendations for surveillance, recommendations for prevention/screening/wellness, recommendations for management of late effects of treatment, and guidelines for addressing psychosocial needs.

Oncology-Related Nursing Practices

Figure 2 shows the percentage of oncology nurses and nononcology nurses who sometimes or always incorporate various cancer-related behaviors in their practice. A high percentage of both oncology and nononcology nurses encourage individuals to incorporate fruits and vegetables and exercise into their daily lives. Oncology nurses are more likely to promote tobacco cessation and cancer screening than nurses in other areas of practice, however. Eighty-four percent or more of these respondents agreed or strongly agreed that they know at what age people should be screened for breast, prostate, colorectal, and cervical cancer. As expected, oncology nurses rated themselves more aware of the screening guidelines.

Barriers

As shown in Figure 3, both groups of nurses considered time constraints to be the biggest barrier to integrating cancer-related knowledge/skills into their practice, whereas nurses' attitudes was the least frequently cited barrier. With the exception of knowledge/training deficits, oncology nurses were generally more likely than other nurses to acknowledge the barriers listed here.

Utilization of Clinical Trials

Seventy percent of oncology nurses, compared with 25% of all other nurses, indicated that they are aware of how to access clinical trials. Forty-five percent of oncology nurses at least sometimes refer or assist patients to access clinical trials, whereas only 14% of other nurses make such referrals. Both oncology and nononcology nurses were most likely to cite concerns about patient management issues and administrative

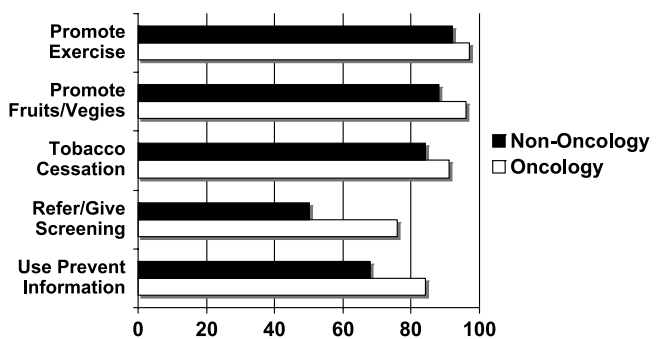


Figure 2 ■ Cancer-related practices. Rows represent the percentage of respondents who sometimes or frequently incorporate various cancer-related behaviors in their practice.

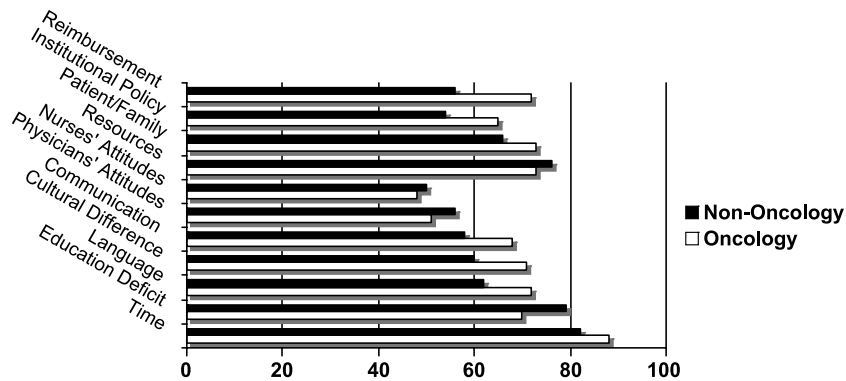


Figure 3 ■ Barriers to oncology in practice. Rows represent the percentage of respondents indicating items were sometimes, frequently, or always a barrier to practice.

or financial burdens as the most frequent barriers to referral to clinical trials (Figure 4).

■ Discussion

When we surveyed nurses in 2000, their top 10 educational needs included pediatric cancer, clinical trials, genetic issues, complementary therapies, cultural diversity and cancer care, male cancers, cancer symptom management, psychosocial issues, terminal care/hospice care for patients with cancer, and cancer pain management.⁴ Although we had more respondents in the current survey than in the 2000 survey (521 vs 352), both groups were similar in the identification of symptom management, complementary therapies, pain management, genetics, and end-of-life care as top priorities for educational programming. Because the 2 survey tools were very different from each other, other comparisons between the 2 groups could not be made. However, the current survey results do reveal a number of areas of both concern and opportunity to guide future program planning.

Pain Management

Of the highest priority learning needs identified, pain management continues to be an important area, especially for the

nononcology nurses. Indeed, improved management of cancer-related pain remains both a US and a statewide concern in Texas. According to the Texas Pain Summit, about 11 million Texans may be living with unrelenting pain¹⁸ and warrant competent intervention by all healthcare providers. Unfortunately, in an ongoing study of individual US states' quality of pain management policies, Texas continues to receive a grade of "C," indicating a need for much improvement.¹⁹ Ongoing nursing education efforts must address both knowledge about cancer-related pain and strategies for overcoming barriers to successful pain management.

Cancer Genetics

Survey respondents also identified cancer genetics as a priority topic for education. Although more oncology than nononcology nurses identified this as a need, all nurses must develop an understanding of genetics and genomic healthcare because cancer has a genetic component that crosscuts the pathogenesis of disease, prevention, screening, and treatment. Indeed, the International Society of Nurses in Genetics identified the knowledge of genetic evaluation, research and treatment development, and participation in policy and program development as key responsibilities for nurses.²⁰ To this end, a national consensus panel of nursing experts and professional

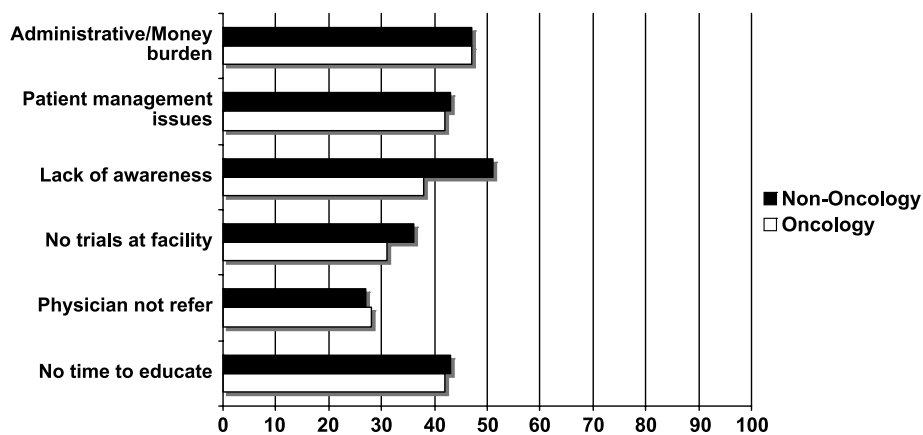


Figure 4 ■ Barriers to clinical trial referrals. Rows represent the percentage of respondents indicating items were sometimes, frequently, or always a barrier to clinical trials referral in their practice.

organizations has stipulated that all registered nurses must be able to incorporate genetic and genomic skills into clinical care.²¹ To support this standard, generalist nursing education curricula must include relevant genetic and genomic learning experiences, and practicing nurses must seek appropriate continuing education opportunities to develop requisite skills.

Survivorship

Given the growing population of cancer survivors within the United States and throughout the world, the care and support of these individuals and their families should be high priorities for all nurses. The American Society of Clinical Oncology predicts that the number of cancer survivors in the United States will increase by 81% over the next decade.²² And by the year 2030, the incidence of cancer in the United States is expected to grow by 45%, or from 1.6 million cases in 2010 to 2.3 million in 2030.²² Yet the number of practicing oncologists and oncology nurses will not keep pace with this burgeoning need for cancer care services.²³ As such, workshop participants at the National Cancer Policy Forum of the Institute of Medicine have recommended that cancer content be included in the academic curriculum for all health-care professionals, given that “cancer and cancer survivorship will be too pervasive to be provided only in an oncology context.”^{24(p46)}

Our survey results revealed that most of our respondents felt that they were adequately prepared to provide care for cancer survivors and agreed that the 6 suggested topics are essential for this care. However, these responses do not reveal whether the nurses possess the knowledge and skills to address these topics or whether they attend to these issues when they encounter survivors in their practice. Ferrell and Winn⁸ have identified prevention of secondary cancers, long-term complications, rehabilitation services, quality-of-life issues, pain and symptom management, and treatment of recurrent cancer as critical areas that must be included in education and training opportunities to improve survivorship care. Although the Texas NOEP organization has identified survivorship as a priority area for programming, we anticipate that increased efforts in this area must be launched.

Tobacco Cessation

The survey revealed that most of the oncology and nononcology nurses indicated that they promote tobacco cessation in their practice. However, the survey did not capture specific interventions used or respondents' knowledge of best practices to promote tobacco cessation. Tobacco use is associated with about 30% of all cancer deaths and is the leading cause of preventable disease and death in the United States.^{1,25} Furthermore, the World Health Organization has identified tobacco use as a global epidemic and estimates that 5 million people die annually of tobacco's effects.²⁶ Although nurses are ideally positioned to provide tobacco cessation services, studies suggest that they are not sufficiently educated to do so, and their efforts are suboptimal at best.²⁷ In addition, nurses' own

smoking status impacts their interventions, in that nurses who smoke may be less likely than nonsmoking nurses to provide effective tobacco cessation interventions to their patients.²⁸ Although our survey did not capture respondents' smoking status, about 15% of US registered nurses and 28% of licensed vocational nurses smoke.²⁹ With this in mind, 2 opportunities to decrease tobacco use must be promoted. The first is targeted training of both nursing students and practicing nurses that includes evidence-based strategies such as referring patients to free quit lines. The second is to promote a smoking cessation campaign directed at nurses, such as the Tobacco Free Nurses initiative.³⁰

Clinical Trials

To develop effective therapeutic options for cancer treatment, clinical trials are required. However, only 3% to 5% of adults with cancer in the United States participate in clinical trials, and 40% of trials do not achieve their patient accrual goals.³¹ Strategies for increasing clinical trials enrollment that are targeted to the lay population have had limited success. For example, Umutyan and colleagues³² implemented a statewide mass media campaign in California and found that although awareness of clinical trials increased, patient accrual rates into trials did not change. Nurses have been identified as having a key role in the education and recruitment of cancer patients into clinical trials.³³ Yet in our survey, only one-quarter of the nononcology nurses were aware of how to access information about clinical trials, and even fewer referred patients for clinical trials. As a result, NOEP is planning to make clinical trials information a priority area for future programming.

As expected, oncology nurses rated themselves as more knowledgeable than nononcology nurses in many areas and were more likely to incorporate cancer-related practices into their clinical care. This information enables continuing education planners to target specific program offerings to different groups of nurses. Depending on the subgroups of greatest interest, program offerings could be targeted by other characteristics of respondents, such as years of practice or nursing role. However, all nurses can encourage cancer prevention and consider the needs of survivors they encounter. Both oncology and generalist nurses cited time constraints as a major barrier to integrating cancer-related knowledge and skills into their practice. Therefore, educational programming should address this concern explicitly by illustrating cost-effective and time-efficient ways to deliver a cancer message.

■ Limitations

The NOEP survey was completed by a convenience sample of nurses who were members of our organization's electronic mailing list, participants in one of our workshops, and nurses referred to the survey by NOEP volunteers or mailing list participants. Thus, the findings may be unique to nurses who value learning about cancer patient care and may not be representative of Texas nurses overall. We did not have the means to control

for overlapping invitations to participate in the study. Although unlikely, especially given the length of the survey, it is possible that a nurse could have participated in the electronic survey and then completed a second, paper-and-pencil survey within the course of attending a NOEP workshop. However, our survey software did preclude the possibility of a nurse completing more than 1 electronic survey. Self-report is a limitation of survey methodology; furthermore, we did not choose to psychometrically test our survey tool.

Because the needs assessment tool focused on self-identified, felt needs of the participants, the results cannot be construed as actual knowledge or skills deficits among the respondents. Future surveys could be constructed to capture knowledge about a particular topic or topics and thus identify areas that warrant programming. For example, Rushton and colleagues³⁴ conducted a statewide assessment of Utah nurses' knowledge and attitudes about cancer pain management. Although oncology nurses had a better understanding than nononcology nurses of recommended pain management practices, the authors used their findings to recommend continuing education activities to address knowledge deficits in both groups. Of course, this type of approach would preclude surveying nurses on a wide variety of topics across the cancer care continuum, but would be useful for planning interventions for specific, targeted content areas. Finally, the survey format limited our ability to probe for more information about responses to survey items. For example, 1 item was phrased as follows: "How much of the following are barriers in integrating cancer-related knowledge/skills into your practice?" Many participants checked "cultural differences" as a response. Unfortunately, these data provide no understanding as to the nature of this concern and limit usefulness for program planning. Inclusion of focus groups or other qualitative data collection strategies could yield more insight into topic areas of this nature.

■ Conclusion

The NOEP learning needs assessment process is unique in that it represents the only ongoing, periodic assessment of cancer-related learning needs from a statewide population of nurses. Findings from this survey are used to guide the nursing education programming priorities for a nonprofit organization dedicated to reducing the burden of cancer for the second most populous state in the United States. Similar approaches to needs assessments can be used by nursing education leaders who are charged with developing and delivering cancer-specific programming for generalist nurses.

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