The number of people age 65 years and older in the United States is projected to increase to almost 20% of the overall population by 2030.1 As the population ages, the incidence and prevalence of age-associated diseases and syndromes will likely increase as well. Age is the principal risk factor for dementia,2 and this risk increases 2-fold every 5 years after age 65.3 Patients with cognitive impairment, including dementia, are in all settings of care, not just ambulatory care or nursing homes. It is estimated that approximately 40% of patients who present to emergency rooms have some form of cognitive impairment.4

Texas, a state in the southwestern US, has a population of over 26 million people. In 2010, adults age 65 years and older accounted for 10.3% of the population of Texas—roughly 2,600,000 adults.5 This is projected to increase to over 5 million adults age 65 and older by 2030, almost doubling the number of older adults in 20 years.5

In 2011, according to the Texas Department of State Health Services, Center for Health Statistics, Health Professions Resource Center, there were 17,996 primary care physicians (PCPs) practicing in Texas, representing a ratio of 69.5 PCPs per 100,000 people.5 The relative lack of adequate resources of PCPs is a national crisis, even more so among geriatric physicians. In 2011, according to the American Board of Medical Specialties, there were 358 certified geriatricians in Texas.6 This is far below the 2,223 geriatricians projected to be needed by 2030 in Texas to care for the 30% of persons over the age of 65 who are most vulnerable and need geriatric care.7 Geriatricians, although skilled in screening and managing patients with dementia, cannot possibly meet all the needs for primary care for older adults in Texas; other providers who care for adult patients must also participate. Advanced practice registered nurses (APRNs) skilled and knowledgeable in the care of older adults can be a ready and capable source of care for older adults in Texas. APRNs in Texas consist of nurse practitioners (NPs), clinical nurse specialists (CNSs), certified registered nurse anesthetists, and certified nurse midwives.

As our demographic profiles continue to evolve in the US and in Texas, APRNs will be involved in the care of older adults in both primary and acute care. As the population continues to age, it is also more
likely that APRNs will care for more patients with dementia. There is limited information regarding screening, evaluation, and management in the practice patterns of current APRNs related to dementia.

**REVIEW OF LITERATURE**

Screening for dementia in asymptomatic patients has been, and still is, controversial. The US Preventive Services Task Force does not recommend for or against screening for dementia, primarily because available interventions are known to only modestly slow cognitive decline. The World Alzheimer’s Report 2011 and the American Academy of Neurology recommend screening when the patient exhibits triggers or is strongly suspected of being demented. When asked, a majority of older adult patients have indicated that they would like to be screened for dementia and given the opportunity to make choices about treatment.

Ideally, dementia screening occurs in primary care when the patient and family, in consultation with a health care provider, identify a need or potential benefit of screening. Early diagnosis may allow patients and families to consider various treatment options and to plan for future needs. However, when access to primary care is limited, screening may not occur at all, and such opportunities may be missed. For example, patients will still present to emergency departments with acute health issues requiring urgent hospitalization who have had little or no engagement in primary care. The assessment of dementia is necessary in this environment, and tailoring the plan of care to the patient’s cognitive status is important for the safe discharge of patients from any care setting.

Applying the concept of screening for dementia in the outpatient setting, Baloch et al described the practice patterns of internal medicine, family practice, and geriatric physicians in a large urban city as well as third-year family medicine and internal medicine residents in Texas. The purpose of this study was to determine if there was an association between training and specialty type with their rating of comfort in identifying and managing dementia in older patients. The study revealed no association between the quantity of training and dementia screening or comfort with diagnosing. Specialty type did have an impact on screening and diagnosing. According to the results, geriatricians were more comfortable asking patients memory questions and making a dementia diagnosis. Because APRNs are also integrally involved with the care of older adults, there also is a need to explore the assessment, evaluation, and management practices of APRNs regarding dementia.

In searching for reports of NP competence and comfort assessing and managing the care of patients with dementia, the literature was sparse. Using the search terms “dementia” and “nurse practitioner” in CINAHL, Medline, Ageline, Academic Search Complete, and Health Source: Nursing Academic Edition, over 400 citations were uncovered. However, the overwhelming majority of these included NPs as 1 of many health care team members who could be contributing team members in various models of care designed to meet the needs of persons with dementia. A few publications stand out for being specifically about NP practice.

Harvan and Cotter provided a thorough review of available and appropriate screening tools for dementia that could be used by NPs, such as the Mini–Mental Status Examination and clock drawing test, but concluded that routine screenings with these instruments were not being used by NPs as they could be. They recommended additional research be conducted to evaluate the use of NPs in the recognition and evaluation of patients with dementia.

Scherer et al reported that 55% of NPs surveyed in the state of New York were “somewhat comfortable” with knowledge of management of Alzheimer disease in patients over age 65 years, whereas only 27% were “very comfortable” and 18% were “not at all comfortable.” This study consisted of surveying 500 randomly selected NPs in New York who participated in an online geriatric course. Information gathered in this study was later used to justify mandatory continuing education on these topics for NPs in New York. Both of the published studies evaluating dementia screening and evaluation practices by NPs found gaps in knowledge and practice patterns among practicing NPs.

**PURPOSE**

The authors of this research wanted to describe the practice of APRNs in Texas in assessing, diagnosing,
evaluating, and managing older adults with dementia and to determine if there was an association between APRN type and practice patterns. The survey questions were adapted for APRNs from an original study of internal medicine, family practice, and geriatric physicians conducted by Baloch et al.\textsuperscript{12} in 2010.

**METHODS**

This was an exploratory, descriptive study based on a convenience sample of APRNs in Texas. Only descriptive statistics were used. The authors modified the original survey items used by Baloch et al.\textsuperscript{12} to better fit the practice and sample of APRNs who see adults in Texas. The survey consisted of 27 multiple-choice items describing their practices about screening, evaluation, and management of patients with dementia. It also included 9 demographic characteristics of the APRN and his or her practice site and setting. Participants had the opportunity to provide a free text answer if none of the choices of the multiple-choice questions were appropriate. When piloted by colleagues of the authors, the entire survey took less than 10 minutes to complete. The study proposal and survey was submitted and approved by the health care system and university institutional review boards and received approval before distribution.

A list of addresses of all recognized APRNs in Texas was purchased from the Board of Nursing (BON). Inclusion criteria included advanced practice nurses recognized in Texas as NPs or CNSs. Exclusion criteria were CNs or NPs whose population excluded adults (pediatric CNSs, neonatal NPs, pediatric NPs, or acute care pediatric NPs). Certified registered nurse anesthetists and certified nurse midwives were also excluded. Because e-mail addresses were not available from the BON, a postcard was mailed to the physical address. The message on the postcard asked potential participants to enter the URL into a Web browser while connected to the Internet in order to access the anonymous survey available on SurveyMonkey.

The survey was left open for 6 weeks after the postcards were mailed. The survey was reopened for 4 additional weeks after the state NP meeting.

**RESULTS**

**Description of Sample**

Over 8,000 postcards were mailed out, and 147 APRNs responded to the survey for a 1.8% response rate. Of the 147, 16 did not reveal critical demographic characteristics about themselves; thus, they were removed from the study sample for the purpose of comparisons of responses according to APRN type. This reduced the sample to 131 participants for analysis (89% of the respondents). Of the 131 remaining participants, 17 (13% of the sample) identified themselves as being a CNS. The remaining 114 APRN survey participants were NPs. Sixty-four (56%) of the sample participants identified themselves as family NPs (FNPs). The next largest group in numbers of participants was gerontologic NPs (GNPs) with 14 (12.2%) participants. The next largest group of participants was adult NPs (ANPs) (12 [10.5% of the sample]). There were 9 acute care NPs (ACNPs) who participated (7.9% of the sample). There were 8 (7% of the sample) who identified themselves as women’s health NPs (WHNPs). The smallest group of participants was psychiatric mental health NPs (PMHNPs) who numbered 7 or 6.1% of the sample (Figure).

The mean age of the sample was 51 years (standard deviation = 10) with a range of 24 to 74 years. The racial distribution of the sample was 83% white (n = 106), 6% black (n = 7), 2% Asian (n = 3), 2% Native American (n = 2), and 8% Latino/Hispanic (n = 10). The sum of all ethnic categories is less than the total sample size because of missing data from participants who did not identify their ethnicity. The sample was 92% female (n = 116). Participants overall reported a mean of 11.5 years of practice experience in their APRN role. The majority of APRNs in Texas, of every type, practiced in urban and suburban locations. More FNPs than any other type of APRN practiced in rural settings.

Participants reported a wide diversity of practice sites. Although some respondents reported practicing in multiple sites, the sites where more respondents practiced were ambulatory care (n = 23), inpatient
(n = 27), outpatient clinics of hospital systems (n = 18), and physician-owned group practice sites (n = 28). Other than the practice site for “inpatient,” primary care could occur at any of the identified practice sites. FNPs practiced in the most diverse sites, and more CNSs practiced in inpatient settings than any other type of provider.

When participants were asked to identify what proportion of patients were age 65 years or over, 53% of the sample reported that more than half of their patient population consisted of persons over age 65. A substantial portion of the participants (22%) reported that more than 75% of their patients were over 65 years old.

Dementia Screening and Assessment Practices
When participants were asked about their screening practices for dementia, 48% of the respondents reported asking only about half of their older adult patients about memory problems. If patients were accompanied by caregivers, 91% of APRN respondents asked caregivers to corroborate patient complaints of memory problems.

If an older adult does report memory problems, most respondents (65%) reported that they will begin the assessment of the memory complaint within the same visit. However, 8% reported that they will delay the assessment to another visit, and another 8% said that they do not assess memory problems or do not feel qualified to assess memory problems (17%). A small remnant of participants (3%) did not answer the question.

When asked how they screened for memory problems, 23% of the sample reported using a single-item screening question such as “Are you having any memory problems?” Forty-six percent of the sample
reported using the Folstein Mini-Mental Status Examination,\textsuperscript{15} and 27\% reported using the Mini-Cog/clock drawing test.\textsuperscript{16} Only 6\% reported using the Montreal Cognitive Assessment.\textsuperscript{17} These are all well-known, validated screens useful for identifying dementia recommended for use in screening for dementia.\textsuperscript{10,18} Fourteen percent reported using other methods that were not specified. An additional 17\% reported that they do not screen for memory problems in their practice. Respondents were able to identify multiple screening methods, so the cumulative percentages did not equal 100\%.

When asked about the diagnostic tests ordered in the workup of a patient who complained of memory problems, a majority of respondents indicated that they would perform a complete history and physical examination (67\%) including medication review (74\%) and focused neurologic examination (50\%). In addition, a large majority also ordered complete blood count (66\%), comprehensive metabolic profile (67\%), and thyroid-stimulating hormone (64\%). Fewer ordered B12 (48\%) or folate levels (35\%), rapid plasma reagent (14\%), or human immunodeficiency virus testing (8\%). Only a subset of the respondents ordered an imaging study of the brain such as computed tomography (11\%) or magnetic resonance imaging (9\%).

**Comfort in Diagnosing Dementia**

When participants were asked about their comfort in making a diagnosis of dementia, 52\% of the respondents overall indicated that they were comfortable in making a diagnosis of dementia, whereas 35\% indicated that they were not. Twelve percent of the sample did not answer this question. When responses to this question were examined according to APRN type, all 14 GNP (100\%) were comfortable making a diagnosis of dementia, but almost all ACNP (88\%) and all WHNP were not comfortable making any diagnosis of dementia. ANP, CNS, FNP, and PMHNP responses ranged from 28\% (PMHNPs) to 38\% (FNPs) who were not comfortable making a diagnosis of dementia.

**Dementia Management Practices**

When participants were asked if they collaborated in the management of patients with dementia, only 78\% of the sample responded to the question. Among those who answered the question, they were equally divided between “yes” and “no.” Those who answered “yes” (they do manage/collaborate in the management of patients with dementia) were also asked additional questions about their usual clinical practices.

When asked about the use of cholinesterase inhibitors in the pharmacologic management of patients with dementia, answers varied widely. Only 40\% of the respondents selected an answer. Among those who answered the question, 35\% reported that 75\% or more of their patients with a diagnosis of dementia were treated with a cholinesterase inhibitor, and 28\% reported that between 50\% to 75\% of their patients were treated with a cholinesterase inhibitor. An equal number and percent of respondents (19\% each) reported that less than 50\% or less than 25\% of their patients were treated with a cholinesterase inhibitor.

When respondents were asked to describe other issues important in the management of patients with dementia, less than 40\% indicated that they assessed activities of daily living in their patients. Similarly, less than 30\% assessed instrumental activities of daily living, and only 20\% discussed advanced care planning. Only 22\% of the sample assessed caregiver strain, and only 5\% discussed financial planning.

**Beliefs About Dementia**

Respondents were asked whether or not they believed that an early diagnosis of dementia could make a difference in the health of older adults and their families. Ninety-six percent of those who answered the question agreed with that statement, and only 2\% disagreed, but 50\% of the sample did not answer the question at all.

When respondents were asked whether they felt their APRN curriculum prepared them to evaluate and manage patients with dementia, more replied “no” (47\%) than “yes” (42\%). When asked to choose from among limited choices of strategies to increase the knowledge of dementia evaluation and management, 27\% supported increased clinical hours of geriatric experience during clinical management courses of their academic NP programs. Thirty-seven percent supported demonstration of assessment, evaluation, and management strategies during their
clinical management courses in their academic programs. Only 16% of the sample supported mandatory 1-time BON continuing education requirements.

LIMITATIONS
The major limitation of this study is the low response rate. Recruiting was limited by the available mailing address list from the Texas BON; e-mail addresses were not available. Since the authors wanted to recruit a representative sample of APRNs in the state, the state registry was deemed the best way to access the largest possible sample of APRNs of all types.

Even though the response rate was low, the proportions of various specialties of advanced practice registered nursing were very similar to the proportion of APRNs in the state, thus adding credibility to these data (Table). In Texas, 10% of all APRNs are CNSs of some type, similar to the 12% in this sample. In Texas, 61% of NPs are FNPs compared with 56% of FNPs in the study sample. In Texas, 10% of NPs are ANPs, similar to the 11% of the study sample. GNP in Texas represent only 4% of NPs, but in this sample they represented 12%. ACNPs in Texas and in this study represent 8%. WHNPs represent 13% of NPs in Texas but only 7% in this sample. PHMNPs in Texas represent only 3% of NPs but 6.1% in this sample.

DISCUSSION
The consensus model for APRN regulation is now being implemented across the US.19 One of the justifications for the consensus model is the need for more APRNs who are competent in the care of older adults. Historically, gerontology NPs and CNSs programs have produced some of the smallest numbers of APRN graduates at the same time when older adults were living longer and increasing as a proportion of our communities. In an effort to increase the capacity for APRNs skilled in the care of older adults, the decision was made to eliminate the gerontology-specific certifications and to strengthen and infuse more substantive gerontologic content into all certifications whose populations include adults, including FNPs and WHNPs. GNP and gerontologic CNS academic programs will no longer be available but will be merged with adult NP, ACNP, and adult CNS programs respectively. All of the recently published NP competencies include skills in assessing and modifying the plan of care for patients with dementia.20-24 The responses of the participants about their practice in this study show where curricular gaps may exist and are addressed by these competencies.

The Texas BON does not collect ethnicity, age, and sex-specific information about APRNs but includes them in data reported about all registered nurses in Texas. Registered nurses in Texas had a mean age of 46; were 89% female; and 65% white, 11% black, 12% Hispanic, and 12% other. Because these data are not specific to APRNs, it is not possible to compare the age and racial profile of the study sample with the statewide profile of APRNs.

Statewide data about APRNs reveal there were over 10,000 CNSs and NPs in Texas in 2011.25 Even though not all of these APRNs would be able to contribute directly to the shortage of primary care providers, they still represent a substantial resource to help meet the health care needs of the citizens of Texas.

The implications of these data are that there may be knowledge and skill gaps among practicing APRNs in Texas whose population and scope of practice includes older adults. The number of older adults and their families with a need for screening,
evaluation, and management of dementia is increasing. Practicing APRNs who participated in this study were similar to the physicians surveyed by Baloch et al. in their comfort and skill diagnosing and managing dementia. The respondents who participated in this survey did support increasing content and skill demonstration by APRN students as a way to address eliminating the gap for future providers. They did not support mandatory continuing education to address this gap. As adult learners who are lifelong learners, practicing APRNs should be open to continuing education opportunities that can help them develop expertise in screening, evaluating, and managing patients with dementia.

CONCLUSIONS

Findings from this project suggest that among sample participants there was wide diversity in practice and skill among APRNs regarding dementia screening, evaluation, and treatment. Only slightly over half of the APRNs in this sample who care for adult patients were comfortable and familiar with the techniques for screening for dementia, diagnosing dementia, or managing patients with dementia. In this sample, there were differences in comfort making a diagnosis of dementia according to specialty type, which is similar to the Baloch et al. study of physicians in Texas. Because the nursing specialties in our sample are distributed similarly to the nursing specialties of NPs in Texas, we have reason to believe that the results of our study may be useful for understanding NPs in Texas generally. The results are based on a nonrepresentative convenience sample. Because of the nonrandom nature of the sample, none of the findings can be extrapolated to NPs generally in Texas. However, the results may indicate some trends among NPs in dealing with dementia screening. The results of this study could be used to guide further quantitative research that could use a random, representative sample.

Patients with dementia will be increasing in number in Texas and in the nation simply because the older adult population is growing. A primary risk factor for dementia is increased age. For APRNs to be able to meet the health needs of older adults, they must be academically and clinically prepared to recognize dementia and also modify the plan of care accordingly, regardless of the setting in which they see the patient. The recommendations of the participants in this nonrepresentative convenience sample supported increasing pedagogical and clinical content focus on the assessment, evaluation, and management of dementia in all adult APRN curricula, regardless of specialty type. Patients with dementia will be seen in all practice settings by almost all APRN types. There is a need and an imperative for increasing the skills and knowledge of future APRNs whose patients include older adults about the assessment, evaluation, and management of dementia.

References


