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Guiyun Zhou, DNP, CRNP, AOCNS
Vita Medical Associates, guiyunzhou@hotmail.com

Jill C Stoltzfus, PhD
St. Luke's Hospital and Health Network

Arlene D Houldin, PhD, PMHCNS-BC
University of Pennsylvania

Susan M Parks, MD
Thomas Jefferson University

Beth Ann Swan, PhD, CRNP, FAAN
Thomas Jefferson University, bethannswan@gmail.com

Online Exclusive Article

Knowledge, Attitudes, and Practice Behaviors of Oncology Advanced Practice Nurses Regarding Advanced Care Planning for Patients With Cancer

Guiyun Zhou, DNP, CRNP, AOCNS®, Jill C. Stoltzfus, PhD, Arlene D. Houldin, PhD, PMHCNS-BC, Susan M. Parks, MD, and Beth Ann Swan, PhD, CRNP, FAAN

Purpose/Objectives: To establish initial reliability and validity of a Web-based survey focused on oncology advanced practice nurses' (APNs') knowledge, attitudes, and practice behaviors regarding advanced care planning, and to obtain preliminary understanding of APNs' knowledge, attitudes, and practice behaviors and perceived barriers to advanced care planning.

Design: Descriptive, cross-sectional, pilot survey study.

Setting: The eastern United States.

Sample: 300 oncology APNs.

Methods: Guided by the Theory of Planned Behavior, a knowledge, attitudes, and practice behaviors survey was developed and reviewed for content validity. The survey was distributed to 300 APNs via e-mail and sent again to the 89 APNs who responded to the initial survey. Exploratory factor analysis was used to examine the construct validity and test-retest reliability of the survey's attitudinal and practice behavior portions.

Main Research Variables: Respondents' demographics, knowledge, attitudes, practice behaviors, and perceived barriers to advanced care planning practice.

Findings: Exploratory factor analysis yielded a five-factor solution from the survey's attitudes and practice behavior portions with internal consistency using Cronbach alpha. Respondents achieved an average of 67% correct answers in the 12-item knowledge section and scored positively in attitudes toward advanced care planning. Their practice behavior scores were marginally positive. The most common reported barriers were from patients' and families' as well as physicians' reluctance to discuss advanced care planning.

Conclusions: The attitudinal and practice behaviors portions of the survey demonstrated preliminary construct validity and test-retest reliability. Regarding advanced care planning, respondents were moderately knowledgeable, but their advanced care planning practice was not routine.

Implications for Nursing: Validly assessing oncology APNs' knowledge, attitudes, and practice behaviors regarding advanced care planning will enable more tailored approaches to improve end-of-life care outcomes.

Cancer is the second-leading cause of death in the United States (American Cancer Society [ACS], 2009). Unfortunately, many Americans with advanced cancers are dying with unmet needs, and they spend their last days of life in physical, psychological, emotional, social, and spiritual pain (Robert Wood Johnson Foundation, 2002). Nationally, an increasing trend has been seen in hospitalizations and intensive care unit admissions toward the end of life in patients with cancer (Earle et al., 2004, 2008; Sharma, Freeman, Zhang, & Goodwin, 2008). Eighteen to 20% of patients with cancer are given toxic chemotherapy during their last two weeks of life (Earle et al., 2004, 2008), and 14% of patients had new chemotherapy initiated during the last month of their lives (Braga et al., 2005). On the other hand, only 20%–40% of dying patients received hospice services (Earle et al., 2008; McCarthy, Burns, Ngo-Metzger, Davis, & Phillips, 2003). For those receiving hospice care, the average hospice stay was rather short (around 16 days) (Darwish-Yassine, Towns, & Finn, 2008; Temel et al., 2008), and many hospice referrals were made within three days of death (Earle et al., 2008).

Advanced care planning is a patient-centered communication process during which clinicians gently explore patients' values, goals, and preferences regarding their future care needs, particularly concerning end-of-life care needs, to ensure their wishes are met should they lose capacity to make decisions (Kass-Bartelmes, Hughes, & Rutherford, 2003; Teno, 2000). For definitions of terms, see Figure 1. A study by Zhang et al. (2009) indicated that only 31% of patients with advanced cancer reported having baseline discussions about end-of-life care issues with oncology clinicians. However, 60%–70% of Americans are willing to discuss advanced care planning if asked by clinicians (Eidsness, Schellinger, Young,

Advanced cancer: cancer that has spread beyond its original site and cannot be cured or controlled with treatment. Most stage IV cancers (metastatic) and some stage III cancers (stage IIIB non-small cell lung cancer with pleural effusions) are considered advanced cancers.

Advanced care planning: a patient-centered communication process between healthcare providers and patients during which healthcare providers explore values, goals, and preferences regarding future care and end-of-life decisions.

Advanced directives: the legal documents that allow people to convey their decisions about end-of-life care beforehand. Advanced directives are living wills or durable power of attorney.

Advanced practice nurse: RNs prepared with graduate nursing education either at a master's or doctoral level. They include nurse practitioners, clinical nurse specialists, certified nurse midwives, and certified registered nurse anesthetists.

End-of-life care: when a disease condition (e.g., cancer) is no longer controlled with medical treatments, end-of-life care begins by focusing on making the patient comfortable based on the patient's and family's decision and preference. The patient receives medications and treatments to control pain and other symptoms such as constipation, nausea, and shortness of breath.

Hospice care: focuses on relieving symptoms and supporting patients who are terminally ill (i.e., expected to live for about six months or fewer). Hospice involves a team-oriented approach to expert medical care, pain management, and emotional and spiritual support. The emphasis is on caring, not curing.

Palliative care: focuses on relief of the pain, symptoms, and stress of serious illness. The goal is to improve quality of life. Palliative care is appropriate at any point in an illness and can be provided at the same time as curative treatment.

Theory of Planned Behavior: claims that a person's deliberate behavior is determined by his or her intention to perform the behavior, and the intention is, in turn, a function of his or her attitude toward the behavior, his or her subjective norm, and perceived behavior control. The best predictor of behavior is intention. In general, the more favorable the attitude and the subjective norm, and the greater the perceived control, the stronger the intention a person will have to perform the specific behavior.

Figure 1. Definition of Terms

Note. Based on information from Ajzen, 2002; American Association of Colleges of Nursing, 1994; American Cancer Society, 2006; Center to Advance Palliative Care, 2009; Kass-Bartelmes et al., 2003; National Cancer Institute, 2000, 2002, 2008.

& Bennett, 2008; Jackson, Rolnick, Asche, & Heinrich, 2009). For patients with advanced cancer progressing to end stage, comfort care and hospice care represent better alternatives for preserving overall quality of life (DeMarco & Ford, 2007).

Previous studies regarding advanced care planning largely addressed advance directives, end-of-life care, and hospice care discussions by physicians, nurses, and allied healthcare professionals. These studies revealed that nurses and physicians expressed discomfort with discussing issues related to advance directives and end-of-life care. Many clinicians had biased views about advance directives, and some perceived that patients and family members were reluctant to discuss these care issues. In addition, insufficient knowledge exists among clinicians regarding advance directives and end-of-life or hospice care, and most felt inadequately trained to deliver news, such as a cancer diagnosis or prognosis and recommending end-of-life care options (Badzek et al., 2006; Bradley et al., 2002; Cramer, McCorkle, Cherlin, Johnson-Hurzeler, & Bradley, 2003; Duke & Thompson, 2007; Feeg & Elebiary, 2005; Jezewski, Brown, et al., 2005; Jezewski, Meeker, & Robillard, 2005; Lipson, Hausman, Higgins, & Burant, 2004; Morrison, Morrison, & Glickman, 1994; Scherer, Jezewski, Graves, Wu, & Bu, 2006).

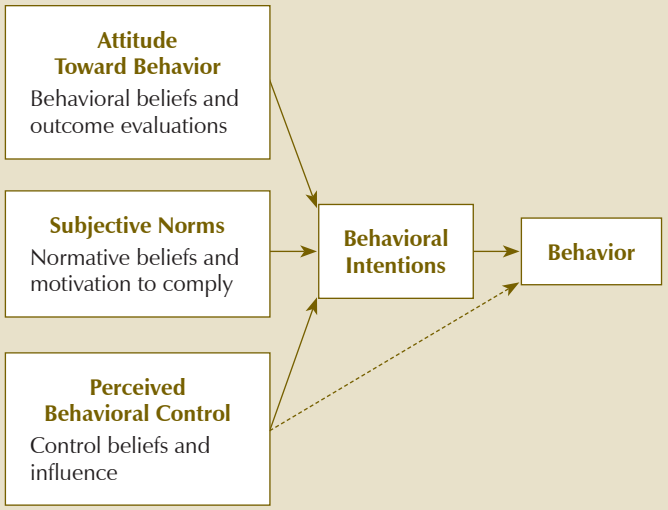
Oncology advanced practice nurses (APNs) are important members of the cancer care team, and they have demonstrated positive patient care outcomes regarding symptom management, functional status, and psychosocial adjustment (Cunningham, 2004; McCorkle et al., 2009; Volker, Kahn, & Penticuff, 2004). Therefore, how effectively oncology APNs practice advanced care planning in a timely manner can significantly affect the psychosocial experiences of patients and their families during the difficult journey from cancer diagnosis to death. To date, little is known about oncology APNs' knowledge, attitudes, and practice behaviors regarding advanced care planning.

Purpose and Objectives

Integrating palliative care and hospice care into routine oncology services has shown some encouraging outcomes for patients with advanced cancer (Davis, 2005; Harrington & Smith, 2008). Oncologists, who are pivotal in caring for patients, are not typically regarded as role models for advanced care planning discussion and end-of-life care delivery (Bradley et al., 2002; Weissman, 2003). As key members in cancer care teams, well-prepared oncology APNs are capable of helping patients explore their goals and preferences of care options according to their disease state to improve end-of-life care outcomes through advanced care planning discussions. Therefore, the objectives of this study were to (a) develop a statistically reliable and valid survey instrument to assess APNs' knowledge, attitudes, and practice behaviors toward advanced care planning, (b) obtain preliminary understanding of oncology APNs' knowledge, attitudes, and practice behaviors regarding advanced care planning, and (c) determine barriers that oncology APNs perceive as impediments to advanced care planning discussions.

Theoretical Framework

Ajzen's (2002) Theory of Planned Behavior provides a theoretical framework of oncology APNs' knowledge, attitudes, and practice behaviors regarding advanced care planning. As depicted in Figure 2, the Theory of Planned Behavior proposes that human behaviors are intentional, with three core variables that predict the behavioral intention and behavior: attitude toward behavior, subjective norms, and perceived behavioral control.



Note. The dashed line represents the ability of perceived behavioral control to not only moderate a person's intention, but also to directly affect the person's behavior.

Figure 2. Theory of Planned Behavior Model

Note. From "TPB Diagram," by I. Ajzen, 2006. Retrieved from http://people.umass.edu/aizen/tpb.diag.html. Copyright 2006 by Icek Ajzen. Adapted with permission.

The Theory of Planned Behavior has been used readily in studies among healthcare professionals to predict behavioral intention and clinical behaviors (Eccles et al., 2006; Godin, Bélanger-Gravel, Eccles, & Grimshaw, 2008; Perkins et al., 2007). Theory validation studies among healthcare professionals found that the Theory of Planned Behavior constructs (attitudes, subjective norms, and perceived behavioral controls) explained 30%–50% of the variance in practice behavioral intention—more than any other cognitive-behavior theories tested (Eccles et al., 2007; Foy et al., 2007). For this study, the three core concepts of the Theory of Planned Behavior are represented by APNs' attitudes toward advanced care planning, subjective norms about advanced care planning discussion, and perceived behavioral control of performing advanced care planning. These concepts guided the design, instrument construction, and objective evaluation for this study.

Methods

Design, Sample, and Setting

This study was a quantitative cross-sectional pilot survey design. It was conducted in test and retest format via a Web-based survey server, SurveyMonkey™. A sample of 100 oncology APNs was projected for the initial survey with a minimum of 50 for the retest survey. Based on an expected Web response rate of 30%–36% (Kaplowitz, Hadlock, & Levine, 2004; Sheehan, 2001), 300 oncology APNs were drawn from one author's professional networks and Oncoogy Nursing Society contacts in the eastern United States. Eighty-nine oncology APNs responded to the initial survey, and 53 of the 89 respondents returned the retest survey.

Study Variables

The main research variables were oncology APNs' demographics (see Table 1) and knowledge, attitudes, and practice behaviors regarding advanced care planning. At the end of the survey, several questions were added to obtain additional qualitative data regarding advanced care planning practice in respondents' clinical settings and their perceived barriers to advanced care planning practice.

Procedure and Data Collection

Survey instrument development: Because no previous surveys measured oncology APNs' knowledge, attitudes, and practice behaviors regarding advanced care planning, one author designed a survey with the goal of establishing preliminary reliability and validity. Several reported survey instruments found in the literature were developed for nurses, physicians, or allied healthcare professionals regarding advance directives and end-of-life or hospice care; however, their contents and formats were not entirely suitable for oncology APNs.

Guided by the Theory of Planned Behavior framework, one author constructed the knowledge, attitudes, and practice behaviors questionnaire by integrating certain items from previously developed survey instruments with investigators' permission and designing additional items based on extensive literature reviews, the author's professional experiences as an oncology APN, and several hospice and palliative experts' recommendations. The survey items were conceptually grouped together based on the Theory of Planned Behavior's three-core concepts: attitude toward behavior, subjective norms, and perceived behavioral control. The questionnaire contained 52 items, including the following domains: demographics (11 items), knowledge (12 items), attitudes (18 items), practice behaviors (4 items), and additional descriptive questions for advanced care planning practice information (7 items). Knowledge items contained statements allowing respondents to choose one answer appropriate for the question. Attitude and practice behavior items used a five-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). Several descriptive questions that were added to the survey tried to capture current advanced care planning practice in respondents' clinical settings with the intention of identifying barriers to advanced care planning practice.

To ensure adequate content validity, the draft survey was reviewed by a panel of five academic researchers

Table 1. Sample Demographics and Practice Characteristics

Characteristic	$\bar{X}$	SD
Age (years)	42.9	10.5
Years working as APN	9.1	7.4
Years working in oncology nursing	14.8	8.7
Characteristic	**n**	**%**
Gender		
Male	2	2
Female	87	98
Religion		
Catholic	41	46
Protestant	26	29
Jewish	5	6
None	9	10
Other	8	9
Education		
Master's degree	84	94
Doctoral degree	3	3
Other	2	2
Current position		
Nurse practitioner	74	83
Clinical nurse specialist	8	9
Other	7	8
Oncology nursing certification		
AOCN®/AOCNP®/AOCNS®	54	61
OCN®	9	10
None	26	29
Practice specialty		
Medical oncology	70	79
Surgical oncology	5	6
Radiation oncology	3	3
Palliative and hospice care	3	3
Other	8	9

N = 89

AOCN®—advanced oncology certified nurse; AOCNP®—advanced oncology certified nurse practitioner; AOCNS®—advanced oncology certified clinical nurse specialist; APN—advanced practice nurse; OCN®—oncology certified nurse

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

and palliative care experts from several academic and clinical institutions, with subsequent revisions made. The study was approved by Thomas Jefferson University's institutional review board.

Initial survey: After the survey was uploaded into SurveyMonkey, six APNs were asked to evaluate the online survey for clarity, ease of use, and time to complete, with changes made accordingly. The survey took 10–15 minutes to complete. The initial survey was sent to 300 oncology APNs via e-mail with a coded survey link to SurveyMonkey in late January 2009. The survey was conducted anonymously and voluntarily, and submitting it online indicated respondents' consent to participate in the study. After 10 days, follow-up e-mail reminders were sent to ensure a better return. A total of 90 respondents submitted the initial survey by the end of February 2009. One survey was incomplete because of missing information; therefore, 89 surveys were included in the final analysis.

Retest survey: To minimize respondents' information recall from the initial survey, a 30–40 day interval was selected before the retest was given. The retest survey link was sent out to the 89 respondents via e-mail in early March 2009. After 10 days, follow-up e-mail reminders were again sent. A total of 53 respondents completed the retest survey.

Survey data from the initial and retest surveys were downloaded to Microsoft® Excel®, manually coded, and then transferred to SAS® [v.9.1] for statistical analysis. A $25 gift certificate was offered as an incentive for respondents who completed the initial and the retest surveys.

Statistical Analysis

Descriptive statistics were used to describe respondents' demographic and professional characteristics and knowledge, attitudes, and practice behavior scores. Common themes regarding advanced care planning practice in the clinical settings and perceived barriers for advanced care planning practice were analyzed and summarized. Exploratory factor analysis of the 89 completed surveys was conducted to establish the best preliminary structure and validity for the attitudinal and practice behavioral portions. Data from 53 respondents who completed both initial and retest surveys were then used to analyze test/retest reliability.

For the exploratory factor analysis, common factor analysis was conducted (Gorsuch, 1983) because of the nature of the data and number of items. The number of factors to extract was determined through parallel analysis using 100 replications of common factor analysis with random data (Buja & Eyuboglu, 1992), with a suggested five factors to extract. Squared multiple correlations represented the initial commonality estimates, with the following three separate rotations conducted to maximize simple structure and obtain the highest hyperplane count or amount of near-zero loading on a factor: (a) varimax (orthogonal) rotation, (b) equamax rotation (combines varimax and quartimax methods to disperse variance evenly across dimensions), and (c) promax (oblique) rotation (Gorsuch, 1983).

Results

Preliminary Survey Validity and Reliability

Following exploratory factor analysis, a five-factor equamax solution supported by promaxian rotation (k = 2; 41.82% hyperplane count) yielded the most robust simple structure, with one (item #25) of the original 22 attitudinal and practice behavior items eliminated from the final model because of salience (factor loadings) less than 0.4. Table 2 displays the 21-item, five-factor equamax model with accompanying rotated factor

Table 2. Exploratory Common Factor Analytic Structure for the Attitudinal and Practice Behavioral Portions of the Advanced Care Planning Knowledge, Attitudes, and Practice Behaviors Survey

Factor	Survey Item	Rotated Loading	
		Equamax[a]	Item Total r[b]
Factor 1. Practice behaviors in discussing advanced care planning	37. My colleagues support me in discussing advanced care planning with patients and families.	0.46	0.48
	42. In my practice, I routinely initiate advanced care planning discussions with patients with advanced cancer.	0.83	0.78
	43. In my practice, I routinely follow-up advanced care planning discussions, when appropriate, with patients with advanced cancer.	0.67	0.67
	44. In my practice, I have had advanced care planning discussions with more than 50% of patients with advanced cancer.	0.77	0.7
	45. In my practice, I routinely talk with patients and families about palliative and hospice care options when appropriate to patients' disease status.	0.47	0.5
Factor 2. Comfort level in discussing advanced care planning	38. I feel comfortable discussing issues related to death and dying with patients and their families.	0.73	0.77
	39. I feel comfortable discussing advanced care planning with patients with advanced cancer.	0.62	0.73
	40. I have sufficient knowledge about how to conduct advanced care planning conversations with patients and their families.	0.61	0.64
	41. I feel confident in my ability to communicate "bad news."	0.55	0.58
Factor 3. Nurse's professional responsibility in discussing advanced care planning	24. Advanced care planning will speed up the dying process in many patients.[c]	0.41	0.39
	32. Advanced care planning is a professional responsibility for oncology APNs.	0.66	0.61
	33. The practice of advanced care planning is consistent with patient-centered care standards.	0.67	0.62
	34. I believe it is my responsibility to discuss advanced care planning with patients and families.	0.68	0.62
Factor 4. Attitudes about meeting patient and family needs with advanced care planning	26. Advanced care planning is important to patients who are diagnosed with life-threatening diseases.	0.53	0.45
	27. Advanced care planning can reduce the end-of-life care decisional crisis.	0.81	0.71
	29. Advanced care planning can improve patients' and families' satisfaction about end-of-life care.	0.57	0.51
	30. Advanced care planning reduces the likelihood of futile treatment at the end of life.	0.46	0.39
Factor 5. Attitudes about advanced care planning and patient responses	28. Advanced care planning can destroy patients' sense of hope.[c]	0.4	0.33
	31. Advanced care practice is the physician's responsibility.[c]	0.41	0.25
	35. Most patients want to know about their diagnosis, prognosis, and available care options.	0.44	0.35
	36. Most patients with advanced cancer, if asked, want to discuss their wishes for end-of-life care with clinicians.	0.63	0.47

[a] Values are obtained from equamax orthogonal rotation supported by promaxian oblique rotation at k = 2. Only values with salient loadings greater than or equal to 0.4 are displayed.

[b] Item total correlations are phi coefficients with the respective item eliminated from the total factor score.

[c] Item valences were reversed for purposes of factor analysis because of initial negative item-total correlations.

N = 89

pattern loadings. Internal consistency for the resulting five-factor solution was computed using Cronbach alpha with the following results: factor 1 (five items), r = 0.83; factor 2 (four items), r = 0.84; factor 3 (four items), r = 0.76; factor 4 (four items), r = 0.72; and factor 5 (four items), r = 0.56. With the exception of factor 5, all internal consistency values were greater than or equal to 0.7, suggesting that items as a whole fit well within their respective factors.

Table 3 represents the bivariate interfactor correlation matrix. Only the correlation between factor 1 and factor 2 was moderately high (r = 0.67), suggesting that unique and reliable variance is present within the factorial model as a whole. Subsequently, exploratory higher-order factor analysis was conducted to determine whether a second-order structure existed, yielding a two-factor solution that accounted for 92.5% of the total variance among all five first-order factors. This outcome supported the notion that the attitude and practice behavior items of the advanced care planning knowledge, attitudes, and practice behaviors survey are somewhat interrelated, rather than representing highly distinctive

and strictly independent constructs.

Continuing with higher-order factor analysis, specificity (coefficient alpha-communality) was calculated to determine the proportion of variance unique to each scale. Specificity values that fell above the error variance (1-alpha) were considered significant determinations of the proportion of the unique and reliable variance within each scale (McDermott, 1993). Four of the five factors' specificity values were greater than their level of error, signifying that they represented discrete and reliable dimensions. Only factor 5's error variance was greater than its specificity, suggesting that its variance was less unique and stable. In summary, although the attitudes and practice behaviors sections of the survey demonstrated preliminary validity as a unidimensional measure, the results of higher-order factor analysis also suggested that these two sections have validity in capturing four different, although somewhat interdependent, categories of attitudes and practice behaviors regarding advanced care planning.

Table 3. Interfactor Correlations and Second-Order Principal Factors for the Attitudes and Practice Behaviors Portion of the Advanced Care Planning Knowledge, Attitudes, and Practice Behaviors Survey

	Correlation[a]					Rotated Loading			
Variable	F1	F2	F3	F4	F5	HOF1	HOF2	Communality	Specificity
Factor									
1	–	–	–	–	–	0.73*	–	0.55	0.28**
2	0.67	–	–	–	–	0.76*	–	0.62	0.22**
3	0.35	0.4	–	–	–	–	0.54*	0.41	0.35**
4	0.09	0.09	0.4	–	–	–	0.56*	0.32	0.4**
5	–	0.31	0.3	0.3	–	–	0.44*	0.25	0.31
Eigen value	–	–	–	–	–	1.27	0.87	–	–
% variance									
Common	–	–	–	–	–	63.5	29	–	–
Cumulative	–	–	–	–	–	63.5	92.5	–	–

* Varimax loadings of greater than or equal to 0.4 are considered salient.

** Communality indicates total proportion of common variance contained within a factor, whereas specificity reflects the proportion of variance that is reliable and unique to a given factor. Specificity is determined by subtracting a factor's communality from its alpha coefficient; specificity values that fall above error variance (1–alpha) are considered significant.

[a] Intercorrelations are derived from unit-weighted factor scores obtained for factors resulting from first-order common factor analysis.

F—factor; HO—higher order

Test-retest reliability was subsequently calculated for a subset of 53 individuals who completed the retest survey one month after the initial survey using the 21 items in the final factorial model. Results revealed a statistically significant correlation between the two surveys ($r = 0.74$, $p < 0.0001$), thereby providing preliminary evidence of test-retest reliability.

Knowledge, Attitudes, and Practice Behaviors

Knowledge: Overall, oncology APN respondents who completed the advanced care planning knowledge, attitudes, and practice behaviors survey were somewhat knowledgeable about advanced care planning as shown in Table 4. The average score of all respondents who answered the 12-item knowledge section correctly was 67% (range 33%–92%), whereas the majority of respondents (88%) achieved greater than a 50% correct score. Noticeably, respondents were less knowledgeable in 4 of the 12 knowledge items. Most respondents mistakenly believed that advance directives alone were effective to communicate patients' wishes for end-of-life care. In fact, the landmark Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatments demonstrated that advance directives in patient charts alone without actual conversations between patients and clinicians were not effective to ensure that patients' wishes were met (Covinsky et al., 2000; Teno et al., 1997). In addition, very few respondents were aware of the Physician Order for Life-Sustaining Treatment (POLST), a set of signed physician orders regarding patients' wishes for end-of-life care. POLST has been increasingly promoted and accepted by legislation in many states (Aging with Dignity, 2007; POLST, 2008).

Attitudes and practice behaviors: Eighteen attitudinal statements measured respondents' attitudes toward advanced care planning, covering beliefs about advanced care planning, comfort level (perceived control) in advanced care planning discussion, and practice behaviors regarding discussing advanced care planning with patients and families. Table 5 provides mean scores and standard deviations for each attitudinal and practice behavior statement. In general, respondents scored positively in their attitudes toward advanced care planning ($\bar{X} = 1.91$, SD = 0.37, range 1.5–2.52), as the lower mean scores were consistent with positive attitudes. To a lesser degree, respondents scored only marginally positive in advanced care planning practice behavior statements that included initiating and following-up on advanced care planning discussions and talking about options of hospice or palliative care with patients with advanced cancer and their families ($\bar{X} = 2.62$, SD = 0.45). When asked about whether they had advanced care planning discussions with 50% or more of patients with advanced cancer in their practice, responses varied greatly ($\bar{X} = 3.04$, SD = 1.02).

Barriers to Advanced Care Planning Discussions and Other Findings

Respondents were asked to report 3–5 barriers to advanced care planning discussions, with a total of 257 comments made and four common themes emerging. The most common barrier to advanced care planning was from patients and families (103 comments), such as "patient/family is in denial," "patient/family is not ready," "patient/family is reluctant," "patient/family does not want to give up," and "patient/family have frictions." The second most common barrier was from physicians (38 comments), such as "physician is reluctant," "physician is rushed," "physician delays the discussion," and "physician discusses other treatment options." The third most common barrier was staff discomfort level (35 comments), such as "staff avoids the topic," "staff does not want to upset patients and families," and "staff fears being misunderstood by patients as giving up." Finally, the fourth most common barrier was time restraint (30 comments), such as "there was not enough time to discuss advanced care planning during patient encounters."

Several additional survey items provided a brief understanding about advanced care planning practices in respondents' clinical settings. When asked about how often their collaborating oncologist(s) initiated advanced care planning discussions, 44% said "sometimes," and 37% said "often" (answer key = never, rarely, sometimes, often, always, don't know). Sixty-seven percent of respondents estimated that 50% or fewer patients with advanced cancer in their work setting had advanced care planning discussions with clinicians. Similarly, 56% of respondents reported that more than half of patients in their work setting received chemotherapy during the last month of life, whereas 62% of respondents stated that less than half of patients used hospice services. For patients using hospice, 47% of respondents reported that the majority (50%–95%) died within two weeks of hospice referrals.

Discussion

In addition to establishing preliminary construct validity for survey items assessing oncology APNs' attitudes and practice behaviors, the current study found that oncology APN respondents were moderately knowledgeable about advanced care planning. This result is comparable to the moderate knowledge level found among general nurse practitioners (NPs) surveyed by Schlegel and Shannon (2000); however, the survey measured NPs' knowledge about end-of-life care and legal guidelines only in the state of Washington. Among RNs, knowledge about end-of-life care and advance directives varied. Lipson et al. (2004) studied 719 RNs from Ohio and found that they were generally knowledgeable and

Table 4. Oncology Advanced Practice Nurses' Knowledge About Advanced Care Planning

Question	n	%
1. Which of the following best describes "advance directive"?		
A. Living will		
B. Durable power of attorney for health care or healthcare proxy		
C. Both A and B (correct)	70	79
D. Don't know		
2. The Patient Self-Determination Act mandates that all competent individuals must sign an advance directive.		
A. True		
B. False (correct)	64	72
C. Don't know		
3. Most Americans have implemented an advance directive.		
A. True		
B. False (correct)	85	96
C. Don't know		
4. A notarized advance directive from one state is legal in all other states.		
A. True		
B. False (correct)	33	37[a]
C. Don't know		
5. A patient may revoke his or her advance directive at any time.		
A. True (correct)	89	100
B. False		
C. Don't know		
6. An advance directive is an effective way to communicate patients' wishes for end-of-life care.		
A. True		
B. False (correct)	5	7[a]
C. Don't know		
7. To my knowledge, the role of the oncology APN in advanced care planning is		
A. Skillfully asking patients to sign an advance directive.		
B. Promoting a structured clinician-patient communication process to discuss the patient's end-of-life care. (correct)	87	98
C. Don't know		
8. The best time to discuss advanced care planning is when patients are seriously ill.		
A. True		
B. False (correct)	89	100
C. Don't know		
9. For an effective advanced care planning discussion, it is important to ask the patient		
A. To bring or sign an advance directive.		
B. To identify a trusted individual as his or her healthcare proxy. (correct)	72	81
C. Don't know		

(Continued on next page)

N = 89

[a] Items with knowledge score less than 50%

Note. Average score of correct answers is 67%.

Table 4. Oncology Advanced Practice Nurses' Knowledge About Advanced Care Planning *(Continued)*

Question	n	%
10. During an advanced care planning discussion, it is important to		
A. Involve the patient's healthcare proxy. (correct)	61	69
B. Disclose the diagnosis and prognosis to the patient.		
C. Don't know		
11. Which of the following descriptions is true about five wishes?		
A. Contain five statements to direct medical treatment when seriously ill.		
B. A living will that outlines patients' personal, emotional, spiritual, and medical wishes. (correct)	38	43[a]
C. Don't know		
12. I am knowledgeable about the physical order for life-sustaining treatment.		
A. True (correct)	15	17[a]
B. False		
C. Don't know		

N = 89

[a] Items with knowledge score less than 50%

Note. Average score of correct answers is 67%.

possessed positive attitudes toward advance directives. Other investigators found that RNs, including oncology nurses, had low or limited knowledge about hospice and advanced care planning (Badzek et al., 2006; Cramer et al., 2003, Jezewski, Brown, et al., 2005; Jezewski, Meeker, et al., 2005). Physicians' knowledge regarding end-of-life care and advanced care planning were found to be similar to that of the oncology APNs in the current survey, with about 50%–75% of physicians rating themselves knowledgeable (Bradley et al., 2002).

Oncology APN respondents in the current study also demonstrated fairly positive attitudes toward advanced care planning. They felt comfortable discussing advanced care planning and related issues with patients and families, similar to the results found among general NPs and RNs (Badzek et al., 2006; Cramer et al., 2003; Lipson et al., 2004; Schlegel & Shannon, 2000; Tyree, Long, & Greenberg, 2005). On the other hand, physicians appeared to be less comfortable discussing end-of-life care issues with patients and families (Bradley et al., 2002). The factor analysis showed a modestly high correlation (r = 0.67) between factor 1 and factor 2, suggesting that factor 2 may be a stronger predictor for advanced care planning practice. This finding supported results from previous studies on physicians and RNs, indicating that attitudes (particularly comfort levels) were positively associated with hospice referrals and advance directives discussions (Bradley et al., 2002, Cramer et al., 2003; Lipson et al., 2004). Additionally, oncology APN respondents in the current survey reported that their advanced care planning practices were only somewhat routine, which was comparable to the 39% of general NPs who regularly initiated advanced care planning surveyed by Schlegel and Shannon (2000).

The current study's respondents also reported that the aggressive treatment received by patients at end of life in their practice settings was quite common, consistent with current literature (Braga et al., 2005; Earle et al., 2004, 2008; Murillo & Koeller, 2006). Similiarly, respondents stated that most patients with advanced cancer in their practice did not have advanced care planning discussions with clinicians, and many continued to receive active chemotherapy during last month of life with only a minority using hospice care. For those referred to hospice, the referral often occurred rather late (e.g., within two weeks of death).

The most common barriers for advanced care planning discussions perceived by respondents were from patients and families, followed by physicians. Although population studies indicate that most Americans are willing to discuss issues related to end-of-life care if approached by clinicians (Eidsness et al., 2008; Jackson et al., 2009), a substantial lack of public knowledge and misconceptions exist about advanced care planning. Many patients consider chemotherapy the only way to fight cancer and equate hospice care to "giving-up" (Moss, Demanelis, Murray, & Jack, 2005; Nelson et al., 2006). Others may hold unrealistic expectations about modern medical advances or even believe that doctors conspire with government and drug companies to withhold cures (Harris, 2008). Such discrepancies in knowledge, expectations, and understanding of advanced care planning and end-of-life care in the general public should be further investigated. Additionally, although respondents scored positively in their attitude toward advanced care planning with a fairly high comfort level, it is interesting to note that staff discomfort in discussing advanced care planning was ranked as the third barrier by study respondents.

Limitations

This pilot survey study had several limitations. First, the sample size was small, meaning the validation results from exploratory factor analysis must be further validated using larger samples (i.e., at least 5–10 respondents per survey item) and additional analytic techniques (e.g., oblique, principal components cluster analysis; invariance testing with random subsamples; convergent or divergent validity; criterion-related validity). This is particularly important given that factor 5 was the least stable construct and may not emerge in future analyses. Second, the current study was descriptive in nature and relied on self-report, which is subject to bias or inaccuracy because respondents may not

Table 5. Advanced Practice Nurse Attitude and Practice Behavior Scores

Article Item	$\bar{X}$	SD
24. Advanced care planning will speed up the dying process in many patients.[a]	1.58	0.75
25. Advanced care planning should be discussed with every patient regardless of diagnosis.	1.69	0.74
26. Advanced care planning is important to patients who are diagnosed with life-threatening diseases.	1.48	0.62
27. Advanced care planning can reduce the end-of-life care decisional crisis.	1.5	0.57
28. Advanced care planning can destroy patients' sense of hope.[a]	1.86	0.7
29. Advanced care planning can improve patients' and families' satisfaction about end-of-life care.	1.6	0.56
30. Advanced care planning reduces the likelihood of futile treatment at the end of life.	2.13	0.81
31. Advanced care planning is the physician's responsibility.[a]	2.37	1.08
32. Advanced care planning is a professional responsibility for oncology APNs.	1.87	0.58
33. The practice of advanced care planning is consistent with patient-centered care standards.	1.82	0.58
34. I believe it is my responsibility to discuss advanced care planning with patients and families.	1.88	0.65
35. Most patients with cancer want to know about their diagnosis, prognosis, and available care options.	1.79	0.61
36. Most patients with advanced cancer, if asked, want to discuss their wishes for end-of-life care with clinicians.	2.14	0.74
37. My colleagues support me in discussing advanced care planning with patients and families.	2.07	0.8
38. I feel comfortable discussing issues related to death and dying with patients and their families.	1.97	0.68
39. I feel comfortable discussing advanced care practices with patients with advanced cancer.	2.01	0.7
40. I have sufficient knowledge about how to conduct advanced care planning conversations with patients with cancer and their families.	2.52	0.95
41. I feel confident in my ability to communicate "bad news."	2.09	0.7
Average attitude score	**1.91**	**0.37**
Clinical Practice Behavior Score Items	$\bar{X}$	SD
42. In my practice, I routinely initiate advanced care planning discussions with patients with advanced cancer.	2.84	1.04
43. In my practice, I routinely follow-up advanced care planning discussions, when appropriate, with patients with advanced cancer.	2.57	0.91
44. In my practice, I have had advanced care planning discussions with more than 50% of patients with advanced cancer.	3.04	1.02
45. In my practice, I routinely talk with patients and families about palliative and hospice care options when appropriate to patients' disease status.	2.01	0.83
Average practice behavior score	**2.62**	**0.45**

N = 89

[a] Reverse coded for analysis

precisely estimate their knowledge, attitudes, or practice behaviors. Third, because advanced care planning is a value-laden practice, social desirability bias also may have influenced respondents' choices to certain survey items (Fisher, 1993); some respondents may not have participated in the survey because of a lack of comfort with the topic of advanced care planning. Fourth, the measures of knowledge and attitudes were limited in number and scope, restricting interpretation of results. Finally, oncology APNs working at different practice settings may have different patient care foci. For example, APNs not involved in direct patient care or already working in hospice may not need to practice advanced care planning. Consequently, the practice behavior scores could be skewed depending on the respondent composition.

Despite these limitations, the current study was able to establish preliminary reliability and validity of the knowledge, attitudes, and practice behaviors survey, as well as provide basic understanding of oncology APNs' knowledge, attitudes, and practice behaviors regarding advanced care planning. Using this survey instrument with some minor modifications and refinement, conducting additional research with a large national sample of oncology APNs will further verify the current findings and allow for inferential analysis of any associations between variables. In addition, the advanced care planning practice barriers described by respondents are intriguing, needing to be further explored through focus-group studies among oncology APN groups as well as patient and family groups.

Conclusion and Implications

Despite increasing national and international attention on palliative and hospice care, front-line oncology clinicians lag behind in knowledge, skills, and competency to address the end-of-life care needs for patients with advanced cancer. A state-by-state report showed general underuse of palliative care services by patients with serious illnesses (Morrison, Dietrich, & Meier, 2008). The needs of patients with advanced cancer cannot be met by additional lines of chemotherapy or admittance to hospitals or intensive care units. Futile end-of-life care with aggressive treatments has led to unnecessary suffering for patients, emotional crises for families, and financial

burdens for families and society at large (Wright et al., 2008). Although patients are the final decision makers about their care, they rely heavily on clinicians for information, advice, guidance, and recommendations.

As advocates for patients, oncology APNs are in a unique and ideal position to facilitate advanced care planning discussions with patients and families. When patients do not want to discuss advanced care planning with clinicians, their wishes should be respected; however, these patients should designate a healthcare proxy to receive important information. As time passes, the topics should be revisited with the patient when a change in disease status occurs because he or she may have become more amenable to truthful discussions (Kubler-Ross, 2005). Therefore, clinicians such as oncology APNs must maintain ongoing conversations with patients or their healthcare proxies throughout the disease trajectory, as well as document patients' updated decisions and communicate with related healthcare team members.

Although the current study sample was relatively small, finding that oncology APNs are moderately knowledgeable with positive attitudes toward advanced care planning is encouraging. On the other hand, perceived barriers may impede oncology APNs from routinely performing effective advanced care planning discussions. In addition, oncologists usually have higher medical authority in clinical decision making, meaning patients and families will more likely want to hear from physicians about their treatment options. However, many physicians are not comfortable discussing advanced care planning. Establishing an institutional advanced care planning policy and procedure, as well as incorporating standardized advanced care planning documentation, can help oncology clinicians overcome certain barriers and difficulties surrounding advanced care planning discussions. At a national level, public education can help eliminate myths regarding advanced care planning, hospice care, and palliative care.

This pilot study established preliminary reliability and validity of the advanced care planning knowledge, attitudes, and practice behaviors survey for oncology APNs in cancer care. Because of the small sample in this study, future research with a large national sample of oncology APNs is needed to validate findings. In addition, the rich comments from respondents regarding barriers for advanced care planning practice indicates a need for further exploration.

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Guiyun Zhou, DNP, CRNP, AOCNS®, is an oncology nurse practitioner at Vita Medical Associates in Bethlehem, PA; Jill C. Stoltzfus, PhD, is the director of the Research Institute at St. Luke's Hospital and Health Network in Bethlehem; Arlene D. Houldin, PhD, PMHCNS-BC, is an associate professor of psychosocial oncology nursing in the School of Nursing at the University of Pennsylvania in Philadelphia; and Susan M. Parks, MD, is an associate professor and Beth Ann Swan, PhD, CRNP, FAAN, is a professor, both in the Jefferson School of Nursing at Thomas Jefferson University in Philadelphia. No financial relationships to disclose. Zhou can be reached at guiyunzhou@hotmail.com, with copy to editor at ONFEditor@ons.org. (Submitted August 2009. Accepted for publication November 5, 2009.)

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