Feature Article

Palliative Care Nursing Competence of Chinese Oncology Nurses and Its Related Factors

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In China, the development of palliative care is challenging because of limited available resources and rapidly increasing demands. The nurses' competence is a significant element in providing high-quality palliative care. This cross-sectional study aimed to describe the palliative care competence among oncology nurses and to examine the relationships between it and palliative care knowledge, attitudes, and workplace learning conditions. A total of 220 nurses with more than 6 months of experience and who worked in inpatient wards were invited to participate in this study. Four questionnaires were administered to collect data—the Palliative Care Quiz for Nurses, the Attitudes Toward Palliative Care Scale, the Workplace Learning Conditions scale, and the Palliative Care Nursing Self-competence Scale. The data were analyzed using descriptive statistics and Pearson correlations. The moderate level of competence was reported by 212 participants (response rate, 96.36%). The scores were lower in the aspects of competence such as spiritual care and ethical and legal issues. Competence was positively related to workplace learning conditions and knowledge but not attitudes. The results highlighted the necessity of improving the palliative care competence among oncology nurses. The optimization of learning conditions in the hospital is recommended to be a vital force in strengthening competence.

KEY WORDS

attitudes, competence, knowledge, learning, palliative care

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Partial financial support of research material and administration was provided by the Graduate School, Prince of Songkla University, Thailand, in the form of a grant.

The authors have no conflicts of interest to disclose.

DOI: 10.1097/NJH.0000000000000581

Cancer is one of the leading causes of morbidity and mortality globally, with approximately 14 million new cases in 2012.[1] Close to 22% of new global cancer cases occur in China, making it a major public health problem.[2] Palliative care is imperative for patients with all types and stages of cancer and their families. Recently, the integration of palliative care into oncology care has been emphasized, particularly at the early stage of cancer diagnosis.[3,4] Research studies have found that palliative care benefits cancer patients and their families by improving their quality of life, spiritual well-being, and satisfaction with care, as well as health care resource utilization.[4,5] In order to improve the quality of care for patients with cancer and their families, health care providers must possess general palliative care competence.[6]

The competence of service providers is an important element needed to achieve high-quality palliative care and to promote and provide essential care compassionately.[6-8] It has been reported that insufficient palliative care competence results in poor symptom management, poor spiritual well-being, and even lower quality of life.[5,9] Palliative care nursing competence reflects nurses' capability of responding to both patients and their family's needs holistically until the last hours of a patient's life. In addition, palliative care nursing competence involves the nurses' ability to deal with ethical issues, recognize the necessary professional development in the palliative care context, and also acquire communication and interpersonal collaboration skills.[6,10,11] As insurance for quality palliative care across illness trajectories and settings, the competencies mentioned above are applied throughout the process of assessment, planning, implementation, and evaluation during caring.[6,7] Palliative nursing competence was believed to be a contributor to better outcomes for patients and relatives in the health care system.[8]

Previous studies in both western and eastern countries have reported a moderate level of palliative care competence among nurses.[12-14] At the same time, these studies reported different levels of perceived competence in the subdimensions of palliative care varying by country and nursing group. For instance, pain management has been rated with the most appropriate level of competence by general nurses from the United Kingdom and acute care

nurses in the United States, whereas it has been reported as one of the competencies oncology nurses in Vietnam were the least prepared for.[12,13,15] Other studies have yielded varying results concerning the aspects of psychological/social/spiritual care and competence regarding ethical and legal issues.[13-16]

Several factors have been found to be associated with the nurses' palliative care competence—palliative care knowledge, attitudes toward palliative care, and workplace learning conditions.[13,17-19] A researcher from Vietnam found that a higher competence level was significantly enhanced by an advanced level of palliative care knowledge.[13] In that country, a large number of education programs have been conducted to improve practitioners' knowledge in order to enhance their palliative care competence.[13] Moreover, nurses have reported that better knowledge, particularly about how to use drugs, enhances their competence in dealing with complex symptom problems and improves communication with patients.[15] However, the relationship between these 2 variables was not identified in the other study.[14]

Abu-Saad Huijer et al[18] highlighted a positive relationship between the attitude toward caring and the nurses' rating scale of palliative care practice, which could reflect their competence to some extent. This was supported by Tait et al,[20] who discovered that the nurses' attitudes affected how comfortable they felt discussing death with patients and their families.[20] Pesut et al[14] also reported that negative feelings can further impact nurses adversely when accepting patients and their family members as primary decision makers. Moreover, a correlation between the attitudes toward spiritual care and perceived spiritual care competence has also been reported,[21,22] although more evidence in the relationship between attitudes and competence is needed.

A statistically positive correlation between workplace learning conditions and nurse competence has been identified.[19,23] Workplace learning refers to the process individuals use to obtain knowledge, develop skills, enhance positive attitudes, and demonstrate caring behavior appropriate for a given context.[19] Kyndt et al[19] reported that several workplace learning conditions (opportunities for reflection, evaluation and cooperation, being coached, etc) in the hospital significantly contribute to the nurses' competence status, in particular, their competence related to communication and problem-solving aspects. However, studies investigating how workplace learning influences palliative care nursing competence are limited. The related information found is that most nurses (96%) do not attend any educational program on palliative care, but they (99%) believe the experience gained through working was more important in providing palliative care for cancer patients.[24]

In China, patients with cancer do not receive high-quality palliative care at the end of life. According to the quality of death index reported by the Economist Intelligence Unit, the Chinese patients' quality of death ranked 71st out of 80 countries across the world.[25] The development of palliative care is challenged by the rapidly increasing demands and limited available services for patients. Unlike support for palliative care education in other developed countries, palliative care still has not been recognized as an important discipline in the medical and nursing education system in China.[14,26] One Chinese researcher suggested that palliative care development in China needs to be improved from many aspects, such as training resources, profound research studies, policy support, and even the transformation of attitudes toward death.[27] Although nurses play an irreplaceable role in the palliative care service, several studies have pointed out that Chinese nurses still have an unsatisfactory level of palliative care knowledge and lack the necessary palliative care skills.[28,29] However, relevant research on palliative care nursing competence in China is still limited. It has been recommended that Chinese nurses need to be better educated and trained in this area in order to improve the palliative care quality for both patients and their caregivers.[30] In order to facilitate the design and implementation of appropriate educational programs and further improve the quality of palliative care offered to patients in the Chinese health care system, an investigation of nurses' palliative care competence and its related factors is essential.

METHODS

Design and Sample

This cross-sectional, correlational research design was aimed to describe the level of palliative care nursing competence and to examine the association between palliative care nursing competence and palliative care knowledge, attitudes toward palliative care, and workplace learning conditions among oncology nurses. Oncology nurses were recruited from one cancer center in Southwest China, a provincial health care setting, which provides tertiary care for cancer patients. The inclusion criteria were oncology nurses who were licensed as a registered nurse working in the inpatient ward of the hospital for at least 6 months. The sample size was determined by power analysis based on the effect size from a previous study conducted in Vietnam,[13] yielding the sample size 194. With consideration of a 20% nonresponse rate, the target sample was consequently 220 oncology nurses. The data were collected during January 2018.

Measurements

Demographic Questionnaire

The nurses' demographic characteristics were collected using the demographic questionnaire, which was designed

by the researcher based on literature review related to the nurses' palliative care competence.[13,14] It consisted of 7 items: age, gender, educational level, length of work experience, personal experiences related to caring for patients with advanced cancer, attending palliative care training, and experience of providing care relevant to palliative contents.

Nurses' Palliative Care Knowledge

Nurses' palliative care knowledge was measured by the Palliative Care Quiz for Nurses (PCQN) questionnaire, developed by Ross et al[31] to measure nurses' palliative care knowledge. Palliative Care Quiz for Nurses was translated into Chinese by Zou[29]; the PCQN Chinese version was applied to 939 general and oncology nurses in an eastern province of China in 2007. Its internal consistency (KR-20) was 0.75 with a test-retest reliability of 0.79. It comprised 20 items. Each item was marked as "true" or "false" or "I don't know." The correct answer was scored as 1 point, yielding a summed score ranging from 0 to 20, with a higher score indicating a higher level of knowledge.

Nurses' Attitudes Toward Palliative Care

The nurses' attitudes toward palliative care were measured by the Attitudes Toward Palliative Care (ATPC) scale, developed by Bradley et al[32] and translated into Chinese by Zou[29] to assess nurses' attitudes toward palliative care. Furthermore, Zou reported that the construct validity of ATPC was acceptable (Kaiser-Meyer-Olkin = 0.717) with Cronbach α at .79 in the same study. There were 3 domains assessed: (1) professional responsibility in palliative care, (2) the efficacy of palliative care, and (3) communication about dying. It consisted of 12 items, with scores for each item ranging from 1 (strongly agree) to 5 (strongly disagree). The summed score ranged from 12 to 60. A higher score indicated a more positive attitude toward palliative care.

Palliative Care Nursing Competence

The Palliative Care Nursing Self-competence Scale (PCNSC) developed by Desbines[33] was used to measure the palliative care nursing competence. Cronbach α for the PCNSC in 908 Canadian nurses was .85.[33] The 50-item PCNSC consisted of 10 domains (5 items for each domain), which were (1) physical needs of pain, (2) other symptom management, (3) psychological needs, (4) social needs, (5) spiritual needs, (6) needs related to functional status, (7) ethical and legal issues, (8) interprofessional collaboration and communication, (9) personal and professional issues related to nursing care, and (10) last hours of life. The score for each item ranged from 0 (not capable at all) to 5 (highly capable), with the total score ranging from 0 to 250. A higher score represented a higher sense of self-competence. By using a formula of group frequency distribution, 3 levels of competence in this study were categorized by the mean value as low (0-83.33), moderate (83.34-166.67), and high competence (166.68-250).

Workplace Learning Conditions

The nurses' perception regarding the available palliative care learning conditions in the hospital was assessed using the Workplace Learning Conditions Scale (WLC) designed by Kyndt and Beausaert.[34] The Workplace Learning Conditions Scale was modified by the researcher to make it more specific to learning about palliative care. The content validity of the modified WLC was tested by 3 nursing experts with experience in education; the Content Validity Index computed by them was 1.0. The 24-item questionnaire used a 5-point Likert scale (1 = totally disagree to 5 = totally agree). The summed score ranged from 24 to 120; a higher score was indicative of a greater workplace learning support for nurses.

Before data collection, permission to use the PCQN, ATPC, PCNSC, and modified WLC questionnaires was obtained from the authors. The back-translation method was employed to translate the PCNSC and WLC questionnaires from English into Mandarin Chinese.[35] Three bilingual experts with medical backgrounds were invited to work separately in each step and discuss the final version to ensure a high quality of both cultural and functional equivalence was maintained in the instruments. A pilot study was conducted in 20 oncology nurses for the reliability testing. Cronbach α coefficients for the Chinese versions of PCNSC and WLC in the present study were .97 and .95; the test-retest reliability values of PCQN, ATPC, PCNSC, and WLC were 0.79, 0.83, 0.77, and 0.95, respectively.

Data Collection and Ethical Considerations

After contacting the chief and head nurses of each inpatient ward, the researcher explained the study's purposes and obtained a name list of registered nurses who met the inclusion criteria. Stratified sampling was achieved using the percentage of the total number of eligible registered nurses in each ward (669 nurses from 24 wards in total), who were then randomly selected via the RAND function in Microsoft Excel (Microsoft Corp, Redmond, WA).

The ethical approval was obtained from the Health and Social Sciences Institutional Review Board, Prince of Songkla University, Thailand (2017NSt-Qn046), and the Yunnan Cancer Hospital. A research subject information sheet and informed consent form along with the questionnaires were sent out to each participant individually by the researcher. The research subject information sheet provided details of purposes of the study along with the data collection process. All participants were assured that their participation was voluntary and that all the information gained in connection with the study was going to be kept confidential. If the participants

agreed to participated, they were asked to sign the consent form and to return their completed forms enclosed in sealed envelope to a drawer at each nursing station that could be accessible only by the researcher.

Data Analysis

All data were double entered into Excel files to verify their accuracy before data analysis. The data were analyzed using statistical software, and statistical significance was set at $P < 0.05$. The descriptive statistics—mean, SD, frequency, and percentage—were computed in order to explain the basic characteristics of the sample and the level of palliative care nursing competence. Because the assumptions of normality, linearity, and homoscedasticity for all continuous variables were met, the Pearson correlation coefficient was used to examine the correlation of palliative nursing competence with palliative care knowledge, attitudes toward palliative care, and workplace learning conditions.

RESULTS

Characteristics of Participants

A total of 220 questionnaires were distributed, and 212 (96.36%) were returned. The majority of the respondents were female, and their age range was 22 to 51 years (mean, 31.75 [SD, 5.93]). More than 95% of the respondents were bachelor's degree graduates. Their experience as a registered nurse ranged from 1 to 30 years, with a mean of 10.42 years. However, the length of their experience in the studied hospital was generally shorter than their total work experience (mean, 9.93 [SD, 6.94]). Nurses who had experience of caring for patients with advanced cancer in the previous year accounted for the majority (90.6%). Meanwhile, 81.1% of them had experience of attending palliative care training.

Regarding training related to palliative care, 172 nurses (81.1%) reported they attended a relevant course in palliative care (Table 1). Three topics were often included in the palliative care training courses: pain management, concept of palliative care, and palliative care in hospice. Concerning palliative care in their daily practice, the nurses reported that pain management was continually provided (94.81%) followed by psychosocial care (69.81%) and hospice care (60.38%).

Palliative Care Nursing Competence and Selected Factors

These oncology nurses possessed competence in all competence dimensions measured; however, it varied in degrees. Their competence was generally at a moderate level (mean, 131.02 [SD, 34.11]). The mean ratings of self-perceived

TABLE 1 Participants' Experience of Attending PC Training and Providing Care

Content of PC Training (n = 172)	n (%)	Nurses' Experience of Providing PC to Cancer Patients (n = 212)	n (%)
Pain management	157 (91.28)	Pain management	201 (94.81)
Concept of PC	116 (67.44)		
PC in hospice	114 (66.28)	Hospice care	128 (60.38)
Psychosocial care	90 (52.33)	Psychosocial care	148 (69.81)
Communication in PC	70 (40.70)	Communication about dying	36 (16.98)
Nurses' role in PC	66 (38.37)		
Caring for patients' families	57 (33.14)	Caring patient's family	116 (54.72)
Other symptom management	51 (29.65)	Other symptom management	109 (51.42)
Spiritual care	33 (19.19)	Spiritual care	23 (10.85)
CAM in PC	25 (14.53)	Symptom management using TCM	42 (19.81)
Bereavement care	20 (11.63)	Bereavement care	14 (6.60)
Advanced care planning	13 (7.56)	Advance care planning	0 (0)
Living will	1 (0.58)		

Abbreviations: CAM, complementary and alternative medicine; PC, palliative care; TCM, traditional Chinese medicine.

competence for each dimension are presented in Table 2. The nurses felt more competent to support patients when dealing with their physical needs, both pain (mean, 14.87 [SD, 4.03]) and other symptoms (mean, 16.06 [SD, 3.72]), and care at the last hours of life (mean, 15.31 [SD, 4.72]) than other aspects of palliative care nursing. On the other hand, they perceived themselves less competent in ethical and legal issues (mean, 10.29 [SD, 4.87]) and supporting the patients' spiritual needs (mean, 10.32 [SD, 4.60]).

In this study, the nurses' palliative care knowledge had a mean of 10.77 (SD, 2.03). In addition, the mean score of attitudes toward palliative care was slightly positive (mean, 41.66 [SD, 4.22]), because the mean value obtained was above the median of the total score of ATPC. Similarly, participants' perceived the working environment as it is supportive toward palliative care learning, but the mean score reported by nurses was lower than the median of WLC total score (mean, 57.04 [SD, 14.48]) (Table 2).

The Relationship Between Palliative Care Competence and Selected Factors

Both palliative care knowledge and workplace learning conditions were associated with the nurses' palliative care competence (Table 3). The Pearson correlation showed a positive relationship between workplace learning conditions and competence at a moderate magnitude ($r = 0.460$, $P < .001$). Also, there was a positive statistically significant correlation between knowledge and palliative care nursing competence at a small magnitude ($r = 0.152$, $P < .05$). However, the relationship between attitudes and competence had no statistical significance.

DISCUSSION

The purpose of this study was to describe the palliative care competence and examine its relationship with selected relevant factors among oncology nurses in mainland China. The nurses' perception of their palliative care competence was at a moderate level (mean value computed at 52.41% of total score). This finding is lower than those of studies among acute care nurses in the United States and nurses working in the Canadian rural area.[12,15] This study's results further confirm the importance of workplace learning conditions in palliative care competence development.

Our participants felt more competent when facing the patients' needs related to pain management. They perceived

TABLE 2 Summary of Score Range, Means, and SDs for Scores of Participants' PC Competence and Assessed Factors

Domains (Items)	Min-Max	Mean	SD
Total score of PC competence (total, 50)	40-221	131.02	34.11
Physical needs: other symptoms (5)	7-25	16.06	3.72
Last hour of life (5)	2-25	15.31	4.72
Physical needs: pain (5)	5-25	14.87	4.03
Needs related to functional status (5)	2-25	14.16	4.23
Psychological needs (5)	4-23	13.90	4.05
Personal and professional issues related to nursing care (5)	0-24	12.30	4.43
Inter-professional collaboration and communication (5)	0-25	12.20	5.31
Social needs (5)	1-21	11.42	4.38
Spiritual needs (5)	0-23	10.32	4.60
Ethical and legal issues (5)	0-22	10.29	4.87
PC knowledge (20)	6-15	10.77	2.03
Attitudes toward PC (12)	30-53	41.66	4.22
Workplace learning conditions for PC (24)	31-110	57.04	14.48

Abbreviation: PC, palliative care.

TABLE 3 Correlation Between Knowledge, Attitudes, Workplace Learning Conditions, and Competence

Variables	*r*
1. Palliative care knowledge	0.152[a]
2. Attitudes toward palliative care	0.007
3. Workplace learning conditions for palliative care	0.460[b]

[a] $P < .05$.
[b] $P < .001$.

that they were capable of handling pain in cancer patients. This might owe to the policies and opportunities for education on pain management being developed earlier than other palliative care subjects in China. In 2011, the National Health and Family Planning Commission of the People's Republic of China established pilot inpatient units in both general and cancer-specialized hospitals to establish standard cancer-pain management regulations. The number of qualified cancer-pain management units across China reached 913 in 2017.[30] In the same year, the national standard for palliative care units was announced.[36] In the hospital setting, physicians provide education and training on cancer-pain management for other doctors and nurses. In addition, the respondents reported that pain management was the most commonly covered topic in their training and practice experience. This is similar to findings among Japanese nurses.[37] However, other studies among Vietnamese and Canadian nurses have found that pain management competence was rated lower.[13,14]

Nurses grasping ethical and legal knowledge in palliative care are essential, especially when facing complex cases that require the application of the palliative care principle of beneficence through suffering relief and obligation to build trust in a therapeutic relationship.[38] However, the nurses in this study reported the lowest-level competence in dealing with ethical and legal issues. This finding was also consistent with those of earlier studies.[12-14] The reasons for this are quite understandable, for instance, advance care planning (ACP) is still not a legal document in China. A survey among Chinese oncologists showed that their knowledge regarding ethical and legal topics was much lower than that reported by other Asian studies.[26] According to this study, fewer than 10% (7.56%) of respondents had attended a course concerning ACP. In fact, none of the respondents reported having any experience with ACP in practice. Nevertheless, competence in this area could be improved significantly through education programs.[14]

Another noticeable point is that the competence regarding the interprofessional collaboration and communication aspect was generally perceived as low. The nurses felt lacking in their ability to either communicate well with other health care providers or promote effective communication with patients and/or other professionals. This finding points out they were unlikely to provide relevant information regarding care as well as communicate effectively with patients and/or their loved ones. Previous studies have found that nurses were unwilling to communicate about death with patients, and they expressed the need to enhance their capabilities in order to provide effective palliative care.[30,39] This was true even when communication in palliative care was included in the palliative care training they attended (40.70%; Table 1); the respondents reported they rarely communicated about death in their practice (16.98%). This barrier could be created by the Chinese culture taboo of talking about death. Consequently, patients are not often included in decision making at the end of life.[30]

The most striking result to emerge from the data is that workplace learning conditions were significantly associated with the nurses' palliative care competence. This finding is consistent with those of related studies, which have shown a strong positive correlation between workplace learning and nurse competence in general.[19,23] Kyndt et al[19] found that opportunities for nurses to cooperate, receive feedback and evaluation, and be coached significantly predicted their general competence level. It is also suggested by existing data that opportunities for cooperation, evaluation, feedback, reflection, knowledge acquisition and access to information, and being coached are associated with a higher level of competence. Moreover, a study in Japan identified that palliative care specialist support markedly helps nurses overcome difficulties faced during palliative care as well as promotes interactions among health care providers.[37] However, the mean score of WLC presented in this study accounted for only 48% of the total WLC score. It is noteworthy that opportunities for cooperation were perceived as the weakest of all the workplace learning aspects. This result also evidenced that nurses were unsatisfied with interprofessional collaboration. Thus, improving the support procedures concerning the points mentioned above, especially regarding professional cooperation, should be included in the process of service improvement, along with improving the learning environment in the hospital specifically for palliative care service.

Furthermore, knowledge was positively related to the nurses' palliative care competence; the nurses felt more capable of delivering services when possessing a higher level of palliative care knowledge. Education contributes to the provision of excellent care, because "nurses cannot practice what they do not know."[40(p15)] This finding agrees with those of previous studies.[13,23] Also, many researches on education programs that aim to enhance the

knowledge of the practitioner have pointed out that knowledge is important in competence development.[13]

This study was unable to demonstrate that the nurses' attitudes toward palliative care were associated with their level of competence. The results cannot approve a significant relationship between their attitudes toward palliative care and their capability to provide palliative care. This could be attributed to the nurses' perception of palliative care; the attitudes score in this study was not distinctly positive (the mean value was computed at 62% of the total score), even though it was higher than the findings reported by previous Chinese studies.[28] In particular, the scores of communication about dying were the lowest out of the 3 domains assessed. This could be the reason for the lack of association between the nurses' attitudes and palliative care competence. This finding is different from those of some earlier studies, which suggested that nurses with positive perceptions regarding care include care practice in their daily work more frequently.[18]

The findings of this study suggest that education focusing on basic knowledge regarding communication with other health care providers, spiritual care, and ethical/legal issues in palliative care should be the center of attention in the current stage. Meanwhile, strengthening the environment of learning in hospitals is beneficial to the advancement of palliative care service. Providing more opportunity for nurses to receive feedback and self-reflect during their daily practice would be significant in improving their palliative care competence. Finally, the above points need to be considered when creating health care management policies.

CONCLUSION

In the cancer hospital under study, the nurses' perception of palliative care competence was at a moderate level. Nurses felt more competent when providing care to meet the patient's physical needs, particularly concerning pain management. Factors associated with the nurses' palliative care competence were workplace learning conditions and palliative care knowledge, both of which were significantly and positively related to competence. Yet, the nurses' attitudes toward care showed no relationship with competence level in this study. In the process of enhancing the nurses' palliative care competence in China, it is of particular importance to teach basic palliative care knowledge as well as promote learning opportunities in the hospital setting for nurses. At the same time, the nurses' attitudes need to be further improved, especially in the part of communication on the topics of death and dying.

There are some limitations to this study, which should be noted and discussed. Some of the items did not cut deeply into how participants perceived the concepts. For example, for the item "assess the spiritual needs of patients with life-threatening illness and their families," some nurses might not have extensive knowledge in regard to what spiritual needs entail, as a few of them had received education pertaining to spiritual care. Without a clear understanding of the subject matter, their evaluation might have been biased.

Acknowledgments

The authors are grateful to the nurses who participated in this study, as well as the researchers who kindly provided permission for the use of their instruments in the data collection.

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