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Research Paper

Current situation and influencing factors of palliative care practice ability among oncology nurses: A multicenter cross-sectional study

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ABSTRACT

Objectives: The study aimed to survey the current situation and explore the factors that influence the ability of palliative care practice among oncology nurses.

Methods: A multicenter cross-sectional study was conducted using stratified random sampling to select 26 tertiary hospitals' oncology departments in Hubei Province, China. A total of 1,198 nurses were included and finished the questionnaire consisting of social demographic characteristics, Palliative Care Self-Report Practice Scale (PCPS), End-of-life Professional Caregiver Survey (EPCS), and Self-Perceived Pain Assessment Knowledge and Confidence Scale (Self-PAC) through the online platform. Data were analyzed using *t*-test, one-way ANOVA, Pearson correlation analysis, and multiple linear regression analysis in SPSS 26.0.

Results: The total score for PCPS was 67.17 ± 12.57 , the three dimensions' scores were: physical symptom care (32.50 ± 6.10), spiritual and psychological care (23.35 ± 4.97), communication (11.58 ± 2.48). There are significant positive correlations between the palliative care practice ability and core competence ($r = 0.77, P < 0.01$), as well as pain assessment ability ($r = 0.56, P < 0.01$). Multiple regression analysis identified female, with high education background (bachelor's degree and master's degree or above), interest in palliative care, pain assessment ability, and core competence were positive predictors of palliative care practice ability (Adjusted $R^2 = 0.668, P < 0.05$).

Conclusions: The overall ability of the oncology nurses to practice palliative care was relatively high, but the palliative nurses reported suboptimal performance in the communication dimension of palliative nursing practice ability. To comprehensively improve oncology nurses' palliative care practice ability, managers must consider the gender structure, educational background, enthusiasm for palliative care work, core competence, and pain assessment ability.

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What is known?

- The factors affecting the ability of Chinese oncology nurses to practice palliative care are unclear.
- The relationship between Chinese oncology nurses' pain assessment ability, palliative core competence, and palliative practice capability remains unclear.

- How to effectively apply the theoretical knowledge of oncology nurses to palliative care clinical practice needs further discussion.

What is new?

- The abilities of Chinese oncology nurses in palliative care practice are relatively advanced. However, palliative nurses reported inadequate performance in the communication aspect of their palliative care practice.
- Significant positive correlations exist between palliative care practice ability, core competence, and pain assessment skills.

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- Education background, gender, interest in palliative care, palliative core competence, and pain assessment ability were positive predictors of oncology nurses' ability to practice palliative care.

1. Introduction

Cancer, a major global health issue, continues to be a primary cause of illness and death, presenting considerable challenges to healthcare systems worldwide. In 2020, there were roughly 19.3 million cancer diagnoses and close to 10 million fatalities [1]. Cancer continues to be a significant health issue in China, with more than 4.5 million new diagnoses and 3 million fatalities annually [2]. With the increasing incidence and mortality rates, the demand for comprehensive and effective cancer care has never been more urgent. Traditionally, China's healthcare system prioritizes curative treatment, neglecting palliative care. Palliative care plays a crucial role in improving the quality of life for cancer patients with life-limiting conditions [3]. Palliative care in oncology targets symptom relief, especially pain, a common and distressing patient issue [4]. Recently, the significance of incorporating palliative care into standard cancer treatment, particularly for patients with advanced or terminal stages, is increasingly acknowledged. Evidence of palliative care's benefits—improved patient outcomes, lower costs, and enhanced care quality—has driven the shift to a more patient-centered approach [5].

Globally, notable advancements have been achieved in palliative care for cancer patients. Many developed countries have established well-organized palliative care systems with dedicated teams of healthcare professionals, including nurses, trained to provide specialized care [6,7]. In China, nursing is also crucial in safeguarding patients' overall welfare, especially in the later stages of illness. Nonetheless, compared to western nations, research in palliative care, particularly in the context of oncology nursing, is still in its early stages. While there is a heightened recognition of palliative care's significance in China's healthcare system, fueled by the escalating cancer burden, its incorporation into standard cancer care practices remains restricted [8,9]. This trend is especially evident in the cancer units of major hospitals, where oncology nurses often face challenges in providing effective palliative care because of inadequate training, resources, and support for professional palliative care.

Oncology nurses' proficiency in palliative care is crucial for delivering high-quality care to patients with advanced illnesses and their families. The expertise of oncology nurses in palliative care entails utilizing pertinent knowledge in clinical environments, encompassing adept pain management, alleviation of psychological burden, and comprehensive care for patients and their loved ones [10]. A cornerstone of palliative care is pain assessment, which largely depends on patients' subjective descriptions of pain intensity, duration, and qualitative attributes [11]. The accuracy and thoroughness of nurses' pain assessments hinge on their core capabilities in palliative care, necessitating profound knowledge of pain mechanisms, proficient communication skills, and cultural empathy, especially when caring for Chinese patients [8]. The core competencies in palliative care comprise vital knowledge, skills, and attitudes that oncology nurses must possess to deliver exceptional care to patients with advanced diseases [12], including communication centered on patients and families, cultural and ethical competence, and streamlined care provision.

What's more, some studies have identified the influencing factors of the practice ability in palliative care among nurses, such as the personality traits of nurses, their ability to cope with death, and their communication skills with terminally ill patients

internationally [13,14]. Nonetheless, the focus on curative treatments in the Chinese healthcare system has frequently led to the neglect of palliative care services, thereby restricting numerous Chinese oncology nurses' opportunities for formal training in this area and leaving them without standardized guidelines to guide their clinical palliative practice [15]. Due to the imperfect evaluation system for palliative care practice competence and the recent introduction of evaluation tools for such competence and ability in China in the past few years, the present status and underlying factors affecting oncology nurses' proficiency in palliative care remain unknown, and related research is still in the exploratory stage.

Considering the crucial role of oncology nurses in providing palliative care and the inadequate incorporation of such care into standard cancer treatment in China, there is a pressing need to investigate the current practice of palliative care among oncology nurses in the mainland of China. This study aimed to evaluate the prevailing status of palliative care practice proficiency among oncology nurses in Hubei Province and particularly focused on examining the extent of their palliative care capabilities and identifying the determinants that impact their effectiveness in delivering palliative care. By examining pain assessment and core competencies, this study can provide insights into the challenges faced by oncology nurses in providing palliative care and to identify potential areas for improvement. Also, it can carry significant ramifications for policymakers, healthcare providers, and educators, informing the formulation of strategies to augment the palliative care competencies of oncology nurses in China.

2. Methods

2.1. Study design and setting

A multicenter cross-sectional study design was employed. A stratified random sampling approach was used to select two tertiary hospitals in each of 13 prefecture-level administrative regions in Hubei Province, China, with a total of 26 hospitals. The study was conducted in the oncology departments of 26 hospitals between June and August 2023.

2.2. Study participants

The study encompassed nurses who fulfilled the subsequent inclusion criteria: 1) who were working in the oncology department; 2) with experience in caring for dying patients; 3) with at least half a year of working experience; 4) holding a valid nursing license issued by the People's Republic of China; 5) who consented to this study and volunteered to participate. Nurses undertaking training or internships in the department were excluded from this study. Moreover, the research did not include nurses unavailable for the study period due to factors like maternity leave, illness, or international studies. The sample size was calculated using the formula for the mean in a single population: $[n = Z_{\alpha/2}^2 \times \sigma^2 / \delta^2]$ [16], assuming a 95% confidence level ($Z_{\alpha/2} = 1.96$) and a standard deviation ($\sigma = 13.60$) [14], and maximum likely error ($\delta = 0.8$) [14]. Considering a 5% invalid response rate, 1,165 participants should be adequate.

2.3. Measurements

2.3.1. Sociodemographic characteristics

The social demographic data including age, gender, marital status, education background, professional title, working years, bereavement experience, relatives suffered from cancer, the annual number of deaths under their care, participation in palliative care

training experience, degree of interest in palliative care and self-evaluated competence in palliative care.

2.3.2. Palliative Care Self-Report Practice Scale

The oncology nurses' palliative care practice ability was assessed using the Palliative Care Self-Report Practice Scale (PCPS), originally developed by Nakazawa et al. in 2010 [10]. This scale is widely used among nurses in Japan [17] and Turkey [18]. The scale was introduced in Chinese by Fu et al. [19] in 2021. The Chinese version of the PCPS encompasses 17 items, which are categorized into three dimensions: physical symptom care (eight items), spiritual and psychological care (six items), and communication skills (three items). The scale employs a five-point Likert scoring scale, ranging from 1 (never) to 5 (always), with total scores spanning from 17 to 85. Higher scores on the Chinese version of the PCPS indicate superior palliative nursing proficiency among nurses. The scale exhibited robust reliability and validity, with an overall Cronbach's α coefficient of 0.909 and individual dimension's coefficients of 0.926, 0.920, and 0.884, respectively.

2.3.3. End-of-life Professional Caregiver Survey

Oncology nurses' palliative care core competence was evaluated utilizing the End-of-life Professional Caregiver Survey (EPCS), a tool originally devised by Lazenby et al. [11]. The EPCS assesses self-perceived palliative core competence and identifies educational needs among palliative nurses. This scale, widely utilized in the United States [20] and Brazil [21], was introduced to China by Zou et al. [22]. The Chinese version of the EPCS encompasses 21 items, categorized into three dimensions: Patient and Family-Centered Communication (PFCC) with five items, Cultural and Ethical Values (CEV) with 11 items, and Effective Care Delivery (ECD) with five items. Utilizing a five-point Likert scale, where 1 denotes "strongly disagree," and 5 indicates "strongly agree," the total score spans from 21 to 105. Higher scores reflect more substantial self-perceived core competence in palliative care and diminished educational needs. The Chinese EPCS version demonstrated excellent reliability and validity, with an overall Cronbach's α coefficient of 0.964 and individual dimension's coefficients of 0.887, 0.956, and 0.964, respectively.

2.3.4. Self-Perceived Pain Assessment Knowledge and Confidence Scale

The Self-Perceived Pain Assessment Knowledge and Confidence Scale (Self-PAC), initially developed by Phillips et al. [12], was utilized to evaluate oncology nurses' pain assessment ability. This instrument is designed to gauge palliative nurses' proficiency in pain assessment and adherence to cancer pain clinical practice guidelines for health professionals. Our research group introduced the Chinese version of the Self-PAC, and its psychometric properties were subsequently assessed by Chinese palliative health professionals in 2023 [23]. The Chinese Self-PAC mirrors the structure of the original scale, consisting of 17 items organized into three dimensions. It employs a 11-point Likert scale, ranging from "no knowledge/not confident" (0) to "extensive knowledge/extremely confident" (10), to compute scores, with a total score range of 0–170. Elevated scores signify more excellent knowledge and proficiency in pain assessment. The Chinese Self-PAC demonstrated excellent reliability and validity, with Cronbach's α coefficient of 0.935 for the overall scale and individual dimensions' coefficients of 0.940, 0.834, and 0.969, respectively. Additionally, the test-retest reliability after a three-week interval was calculated to be 0.930.

2.4. Data collection

This study adopted the Wenjuanxing platform to collect data.

The main contents of the questionnaire include social demographic characteristics, PCPS, EPCS, and Self-PAC. All scales used in this study were authorized by the original authors. Also, it includes the purpose and importance of the study, some instructions, and informed consent. Head nurses from the selected departments collectively engaged in the online training program coordinated by our research team. After the training, they emailed the QR code of the questionnaire to those nurses who were included in the study. The online survey platform enabled nurses to access and complete the questionnaire at their convenience from any location while incorporating features to prevent multiple submissions, thereby enhancing data accuracy. The research team reviewed and excluded contradictory or inconsistent responses and those where the same option was selected for all items. The survey remained open for a specified period (from the start of the survey to August 2023). In this study, 1,261 questionnaires were distributed, and 1,198 were deemed valid, with an effective response rate of 95%.

2.5. Statistical analysis

We used SPSS 26.0 to analyze data with two-sided statistical tests set at a significance level of $P < 0.05$. Descriptive statistics for demographic and other variables were reported means and standard deviations (*SD*) for continuous data and frequencies (*n*) and percentages (%) for categorical data. We used *t*-test and one-way ANOVA to compare differences in PCPS scores among categorical groups. To evaluate the relationships between core competence, pain assessment ability, and palliative care practice ability, we utilized Pearson correlation analysis. Furthermore, we conducted multiple linear regression analyses to determine the factors affecting the ability to practice palliative care.

2.6. Ethical considerations

Participants were assured of their right to withdraw from the survey at any point, with the guarantee that their responses would remain confidential and would not be shared with third parties. The study received ethical approval from Shiyuan Taihe Hospital (#2021KS021).

3. Results

3.1. The participants' characteristics

The participants' ages ranged from 21 to 50 years, averaging 34.63 ± 9.22 years. Most of the oncology nurses were female (98.2%), married (75.4%), and hold a bachelor's degree (89.5%). More than half of the population have had experiences of having relatives with cancer (57.4%) and bereavement experience (58.8%). With an average work experience of around 2.97 years, 21.4% of nurses cared for more than ten dying patients in the past year. 44.6% of nurses expressed extreme interest in palliative care work, and 44.8% reported possessing competent palliative care competency. Two-thirds of them have also received training in palliative care. Additional demographic information of the study participants is presented in [Table 1](#).

3.2. Current status of palliative care practice ability

The overall score of PCPS was 67.17 ± 12.57 , with subdomain scores of 32.50 ± 6.10 for physical symptom care, 23.35 ± 4.97 for spiritual and psychological care, and 11.58 ± 2.48 for communication. Univariate analysis revealed significant disparities in palliative care practice ability based on gender, educational background, professional title, participation in palliative care training, level of

Table 1
Demographic characteristics of the participants ($n = 1,198$).

Variables	n (%)	PCPS	F/t	P
Age (years)				
≤ 25	100 (8.3)	68.14 ± 12.11	1.008 ^a	0.389
26–35	694 (57.9)	66.87 ± 13.14		
36–45	257 (21.5)	68.38 ± 12.27		
≥ 46	147 (12.3)	67.42 ± 12.28		
Gender				
Male	21 (1.8)	54.73 ± 15.56	3.250 ^b	0.001
Female	1,177 (98.2)	68.59 ± 19.43		
Marital status				
Unmarried	265 (22.1)	66.39 ± 13.10	0.103 ^a	0.902
Married	903 (75.4)	67.47 ± 12.28		
Divorced or widowed	30 (2.5)	65.30 ± 16.39		
Education background				
College degree or under	98 (8.2)	63.14 ± 11.34	26.365 ^a	<0.001
Bachelor's degree	1,072 (89.5)	69.23 ± 12.75		
Master's degree or above	28 (2.3)	73.26 ± 5.61		
Professional title				
Junior	550 (45.9)	68.45 ± 13.24	7.936 ^a	<0.001
Intermediate	564 (47.1)	67.54 ± 12.63		
Senior	84 (7.0)	73.46 ± 8.79		
Working years (years)				
1–3	143 (11.9)	69.14 ± 11.73	1.645 ^a	0.177
4–5	211 (17.6)	66.74 ± 11.42		
6–10	384 (32.1)	66.63 ± 13.33		
≥ 11	460 (38.4)	67.73 ± 13.15		
Bereavement experience				
No	493 (41.2)	67.05 ± 11.67	0.270 ^b	0.787
Yes	705 (58.8)	66.86 ± 12.23		
Relatives suffered from cancer				
No	510 (42.6)	65.76 ± 13.12	1.450 ^b	0.147
Yes	688 (57.4)	66.85 ± 12.67		
Number of deaths cared for in the past year				
0–10	942 (78.6)	67.25 ± 13.10	2.220 ^a	0.084
11–30	179 (15.0)	68.65 ± 12.57		
31–50	36 (3.0)	68.78 ± 7.93		
≥ 51	41 (3.4)	63.22 ± 7.68		
Participate in palliative care training				
No	384 (32.1)	64.41 ± 13.19	5.584 ^b	<0.001
Yes	814 (67.9)	68.77 ± 12.33		
Degree of interest in palliative care				
Not interested	62 (5.2)	63.23 ± 10.72	31.759 ^a	<0.001
General	601 (50.2)	64.98 ± 13.66		
Extremely interested	535 (44.6)	70.53 ± 11.16		
Self-assessment of palliative care competency				
Not competent	68 (5.7)	57.50 ± 12.69	80.718 ^a	<0.001
General	593 (49.5)	64.36 ± 12.10		
Competent	537 (44.8)	71.94 ± 11.79		

Note: Data are Mean ± SD. PCPS = Palliative Care Self-Report Practice Scale. ^a one-way ANOVA. ^b t -test.

interest in palliative care, and self-assessment of palliative care competence ($P < 0.05$) (Table 1).

3.3. Correlation between core competence, pain assessment ability, and palliative care practice ability

The overall scores for the EPCS and Self-PAC were 76.67 ± 19.59 and 125.68 ± 31.16 , respectively. Pearson correlation analysis indicated strong positive associations between core competence and palliative care practice ability ($r = 0.77$, $P < 0.01$), as well as between pain assessment ability and palliative care practice ability among oncology nurses ($r = 0.56$, $P < 0.01$).

3.4. Multivariate analysis of palliative care practice ability

The total PCPS score of oncology nurses served as a dependent variable for multiple linear regression analysis ($\alpha_{in} = 0.05$, $\alpha_{out} = 0.10$). Gender (female: $\beta' = 0.065$, $P < 0.001$, 95%CI: 3.018–9.582), educational background (bachelor's degree:

$\beta' = 0.150$, $P < 0.001$, 95%CI: 3.846–8.617; master's degree or above: $\beta' = 0.075$, $P < 0.001$, 95%CI: 1.451–11.167), degree of interest in palliative care (general: $\beta' = 0.209$, $P < 0.001$, 95%CI: 3.178–7.495; extremely interested: $\beta' = 0.189$, $P < 0.001$, 95%CI: 2.522–7.187), palliative care core competencies of oncology nurses ($\beta' = 0.656$, $P < 0.001$, 95%CI: 0.400–0.455) and pain assessment ability ($\beta' = 0.240$, $P < 0.001$, 95%CI: 0.083–0.114) were found to be the significant predictors of oncology nurses' palliative practice ability (Adjusted $R^2 = 0.668$, $P < 0.05$) (Table 2).

4. Discussion

This study investigated the current status and influencing factors of palliative care clinical nursing practice ability among Chinese oncology nurses. The overall score on the PCPS was 67.17 ± 12.57 , indicating a relatively high level of proficiency that is comparable to findings reported by Sato et al. [17] (item average score: 3.70 ± 0.60) in Japan but consistent with An et al. [18] (67.81 ± 13.60) in China. However, the ability of the palliative care clinical nursing practice among Chinese oncology nurses was inferior to that of physicians from Japan [24] and the United States [25]. This discrepancy highlights the need for further practical training and experience-sharing opportunities to bridge the gap between theoretical knowledge and clinical practice, especially in specialized fields like palliative care. In this study, palliative nurses reported lower performance in the communication aspect of their palliative nursing skills, which is consistent with earlier research [26,27]. Communication between palliative care providers and patients has been recognized as a complex and difficult component of palliative care [26,27], posing a significant obstacle to enhancing palliative care delivery. Effective communication is a vital therapeutic tool in this field. Several factors may contribute to this challenge. Firstly, the high workloads and unfavorable patient-to-nurse ratios that clinical nurses in China often face can restrict the time available for meaningful patient interactions [28]. Secondly, the gradual development of palliative care in China has led to insufficient training systems, with managers not offering enough opportunities for nurses to hone their palliative communication skills [28]. Moreover, cultural factors, such as traditional Chinese taboos around discussing death, limited understanding of death, and mistrust of nurses among patients and families, can further impede effective communication [29]. Notably, our study found a significant difference in PCPS scores between nurses who had received palliative care training and those who hadn't, emphasizing the potential impact of improving individual skills on addressing palliative care challenges. Therefore, it is crucial to implement targeted training and educational programs that enhance nurses' palliative care communication abilities [30].

Within the scope of oncology nursing practice in China, the commendable performance of oncology nurses in the domains of physical symptom care and spiritual and psychological care underscores notable advancements in elevating the holistic care quality for cancer patients. Regarding physical symptom care, oncology nurses demonstrate proficiency in managing and mitigating patients' physical manifestations by applying specialized nursing skills. They employ pain management and symptom control strategies to alleviate discomforts like pain, nausea, and vomiting, ultimately enhancing patients' overall quality of life [31]. Moreover, in keeping with the relentless progression of medical technology, these nurses actively integrate novel techniques and methodologies, including remote medical nursing interventions, to further refine the efficacy of symptom management [32]. This comprehensive approach to physical symptom care facilitates patients' recuperation and bolsters their treatment adherence and confidence.

Table 2
Multiple linear regression analysis of palliative care practice ability.

Items	β	SE	β'	t	P	95%CI (lower)	95%CI (upper)
Constant	16.395	2.273	–	7.212	< 0.001	11.935	20.855
Female (ref.: male)	6.300	1.673	0.065	3.766	< 0.001	3.018	9.582
Education background (ref.: college degree or under)							
Bachelor's degree	6.232	1.216	0.150	5.125	< 0.001	3.846	8.617
Master's degree or above	6.309	2.476	0.075	2.548	< 0.001	1.451	11.167
Professional title (ref.: junior)							
Intermediate	–0.650	1.391	–0.013	–0.467	0.640	–3.379	2.078
Senior	0.836	0.898	0.017	0.931	0.352	–0.925	2.597
Participate in palliative care training (ref.: no training)	0.423	0.510	0.015	0.830	0.406	–0.577	1.423
Degree of interest in palliative care (ref.: not interested)							
General	5.337	1.100	0.209	4.857	< 0.001	3.178	7.495
Extremely interested	4.854	1.189	0.189	4.083	< 0.001	2.522	7.187
Self-assessment of palliative care competency (ref.: not competent)							
General	–0.538	1.084	0.021	–0.497	0.620	–2.666	1.589
Competent	–0.568	1.189	–0.022	–0.477	0.633	–2.901	1.766
EPCS	0.429	0.014	0.656	30.526	< 0.001	0.400	0.455
Self-PAC	0.098	0.008	0.240	12.367	< 0.001	0.083	0.114

Note: $R = 0.820$, $R^2 = 0.6728$, Adjusted $R^2 = 0.668$, $F = 201.993$, $P < 0.001$. EPCS = End-of-life Professional Caregiver Survey. Self-PAC = Self-Perceived Pain Assessment Knowledge and Confidence Scale.

In the sphere of spiritual and psychological care, oncology nurses play an indispensable role. Through empathetic listening, reassurance, and encouragement, they effectively alleviate patients' anxiety, depression, and other psychological distress, thereby fostering a positive nurse-patient rapport [33]. Additionally, they actively facilitate patients' access to social support networks, encouraging interactions with family, friends, and patient support groups [34]. These efforts contribute to cultivating a resilient mindset in patients, enabling them to navigate better the challenges associated with their illness. Furthermore, oncology nurses engage in diverse psychological intervention activities, encompassing psychological counseling, psychotherapy, and relaxation techniques, to further augment patients' mental well-being [35]. The exemplary scores attained by Chinese oncology nurses in physical symptom care and spiritual and psychological care can be attributed to their expertise in nursing, adept communication skills, and dedication to providing comprehensive care and support to patients. As medical technology continues to evolve and nursing paradigms shift, there is a strong expectation that Chinese oncology nurses will continue to make significant strides in enhancing the holistic care of cancer patients.

The multiple linear regression analysis identified key predictors of oncology nurses' palliative care practice ability, including their educational background, gender, interest in palliative care, core competencies in palliative care, and self-assessed pain assessment skills. The link between nurses' core competencies and their proficiency in palliative care practice is crucial. Previous study has shown that strong core competencies, such as assessing patient needs, managing pain, providing psychological support, and collaborating with multidisciplinary teams, significantly boost nursing effectiveness in palliative care [36]. Nurses with these competencies are better at creating personalized care plans, handling complex clinical situations, and resolving ethical dilemmas, ultimately leading to better patient outcomes and improved quality of life. Therefore, strengthening these core competencies is vital for advancing palliative care practice. Firstly, effective patient- and family-centered communication is fundamental in palliative care. Nurses must excel at building trust with patients and families, offering emotional support, and conveying complex medical information reassuringly and comprehensibly. This requires not only excellent verbal and non-verbal communication skills but also a deep understanding of the emotional and psychological needs of those facing terminal illnesses [37].

Secondly, cultural and ethical values play a pivotal role in shaping how nurses approach their work in palliative care. Respecting patients' cultural backgrounds, beliefs, and values is crucial for ensuring that care is provided sensitively and respectfully [38]. Effective care delivery competency is vital for ensuring that patients receive the highest quality of care. This includes assessing patients' needs accurately, developing and implementing care plans tailored to individual patients, and collaborating effectively with other healthcare professionals to ensure seamless and coordinated care [26].

Nurses' expertise in pain assessment is a vital indicator of their proficiency in palliative care. With intense pain assessment skills, nurses can accurately determine patients' pain levels, design personalized nursing interventions, effectively alleviate pain, and ultimately improve patients' quality of life [39]. This ability highlights nurses' professional competence and directly affects the overall quality of palliative care. Therefore, enhancing nurses' pain assessment capabilities is a key strategy for raising the standard of palliative care. Indeed, adopting a practical pain assessment and management system can significantly guide palliative care nurses in providing optimal pain relief [40]. However, despite China's significant research efforts in managing physical symptoms in palliative care, healthcare professionals' proficiency in pain management is still moderate [29]. Chinese palliative care nurses mainly rely on standard pain assessment tools, lacking specific measures tailored for terminally ill patients [41]. In contrast, the United Kingdom and Hong Kong, China have developed comprehensive and widely recognized protocols for managing pain in palliative care [42,43]. By referring to these studies' results, researchers can develop tailored practice guidelines for pain management in palliative care, ensuring high-quality care for patients.

Oncology nurses with higher educational backgrounds and a greater fondness for palliative care tended to exhibit higher levels of practice in this field. This may be attributed to nurses with higher educational qualifications possessing deeper professional knowledge and are more likely to actively seek new knowledge and skills to enhance their practical abilities [38]. Moreover, nursing staff who enjoy palliative care often have a better understanding and empathy for patients' suffering and needs, enabling them to provide more attentive and personalized services [44]. Therefore, when selecting specialists for palliative care, hospital administrators need to focus on stimulating the intrinsic motivation of medical staff and enhancing their educational advancement. In the

present study, female oncology nurses generally demonstrated higher practice ability scores than their male counterparts. This phenomenon may be attributed to societal gender roles, the application of professional knowledge, and communication and empathy skills. Females often possess innate advantages in emotional care and interpersonal communication, enabling them to better translate acquired knowledge into practical nursing skills and continually refine them through practice [45]. This observation suggests that hospital administrators should consider gender when selecting palliative care staff while strengthening professional training for all nurses and promoting gender equality and diverse development to enhance the overall quality of palliative care and foster a more inclusive and efficient healthcare environment.

To promote the ongoing growth of palliative care across China, the National Health Commission has launched a staged rollout of pilot programs since 2017. Thus far, three waves of these national initiatives have covered 185 cities and districts nationwide. Significantly, the reach of these projects has steadily expanded, shifting from localized city/district interventions to comprehensive provincial/municipal implementations [46]. These pilot efforts aim to lay a solid groundwork for the large-scale deployment of palliative care services. In support of this goal, pertinent authorities have also promulgated the “Basic Standards and Management Regulations for Palliative Care Centers”, which delineate explicit criteria for establishing and administering such centers [47]. Although a series of policies and measures for palliative care have been introduced at the national level, effectively implementing these policies and measures remains challenging. According to the results of this study, we need to strictly examine the gender structure, educational background, and enthusiasm for palliative care work among nursing staff in pilot institutions. Accordingly, we should strengthen the training of nursing staff’s core capabilities in palliative care and the design of course content. To enhance the efficacy of palliative care for cancer patients, augmenting practitioners’ communication proficiency, refining their pain assessment skills, and bolstering their capacity to manage stress and address emotional turmoil is imperative. Furthermore, optimal personnel allocation and rational workload distribution are crucial factors that must be meticulously considered to facilitate the efficient delivery of palliative care services and foster the robust progression of China’s palliative care sector.

5. Limitations and implications

The present study has several limitations. Firstly, the data were collected solely from tertiary hospital oncology units, limiting the generalizability of the findings to other settings, such as residential care facilities and community settings. Secondly, the study focused only on oncology nurses, neglecting other crucial healthcare professionals, including physicians and various palliative care providers, thus potentially presenting an incomplete view of palliative care in the mainland of China. Thirdly, using self-reported data from palliative care nurses may have led to response bias, potentially inflating their perceived proficiency in palliative care clinical practices.

In the future, researchers should recruit participants from various institutions, such as nursing homes, while incorporating a broader spectrum of palliative medical staff, including doctors. Additionally, subsequent studies could benefit from establishing a multi-faceted evaluation mechanism with input from different stakeholders, such as managers and patients, to comprehensively assess the practice level of palliative care. These efforts could contribute to a more holistic understanding of palliative care practice in China.

6. Conclusions

To summarize, the findings of this research suggested that Chinese oncology nurses demonstrate a relatively high level of proficiency in palliative care practice. Nonetheless, they reported deficiencies in the communication aspect of their palliative nursing capabilities. Factors such as educational background, gender, interest in palliative care, pain assessment skills, and core competence emerged as significant positive predictors of Chinese oncology nurses’ ability to engage in palliative care practice. To enhance palliative care practice effectiveness, managers should consider gender, education, and enthusiasm during nurse selection and the core competencies of Chinese oncology nurses, particularly their communication skills and personal values within the scope of palliative care provision, including their skills in pain assessment, including the application of pain assessment tools and mastery of related knowledge, required further enhancement.

CRedit authorship contribution statement

Xiaofei Nie: Conceptualization, Methodology, Formal analysis, Data curation, Writing - original draft, Writing - review & editing, Project administration. **Fanfan Lv:** Methodology, Validation, Investigation, Resources, Data curation, Writing - original draft, Project administration. **Longti Li:** Conceptualization, Formal analysis, Investigation, Resources, Data curation. **Jia Jia:** Conceptualization, Methodology, Formal analysis, Investigation, Project administration, Writing - original draft, Writing - review & editing.

Data availability statement

The datasets generated during and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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Declaration of competing interest

The authors have declared no conflict of interest.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ijnss.2024.12.006>.

References

- [1] Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, et al. Global cancer observatory: cancer today. Lyon: International Agency for Research on Cancer; 2020. <https://gco.iarc.fr/today>. [Accessed 28 August 2024].
- [2] Qi JL, Li ML, Wang LJ, Hu YF, Liu W, Long Z, et al. National and subnational trends in cancer burden in China, 2005–20: An analysis of national mortality surveillance data. *Lancet Public Health* 2023;8(12):e943–55. [https://doi.org/10.1016/S2468-2667\(23\)00211-6](https://doi.org/10.1016/S2468-2667(23)00211-6).
- [3] Radbruch L, De Lima L, Knaut F, Wenk R, Ali Z, Bhatnagar S, et al. Redefining palliative care—a new consensus-based definition. *J Pain Symptom Manag*

- 2020;60(4):754–64. <https://doi.org/10.1016/j.jpainsymman.2020.04.027>.
- [4] Parajuli J, Hupcey JE, Kitko L, Birriel B. Palliative care: oncology nurses' confidence in provision to patients with cancer. *Clin J Oncol Nurs* 2021;25(4):449–55. <https://doi.org/10.1188/21.CJON.449-455>.
- [5] Tapuria A, Porat T, Kalra D, Dsouza G, Sun XH, Curcin V. Impact of patient access to their electronic health record: systematic review. *Inf Health Soc Care* 2021;46(2):192–204. <https://doi.org/10.1080/17538157.2021.1879810>.
- [6] Arantzamendi M, Sapeta P, Belar A, Centeno C. How palliative care professionals develop coping competence through their career: a grounded theory. *Palliat Med* 2024;38(3):284–96. <https://doi.org/10.1177/02692163241229961>.
- [7] Bainbridge D, Bishop V, Myers J, Marshall D, Stajduhar K, Seow H. Effectiveness of training programs about a palliative care approach: a systematic review of intervention trials for health care professionals. *J Palliat Med* 2023;26(4):564–81. <https://doi.org/10.1089/jpm.2022.0051>.
- [8] Wu LH, Chen XY, Jia SF, Yan LY, Li J, Zhang LW, et al. Evaluating the relationship between pain empathy, knowledge and attitudes among nurses in North China: a cross-sectional study. *BMC Nurs* 2023;22(1):411. <https://doi.org/10.1186/s12912-023-01577-2>.
- [9] Li S, Zhu XH, Zhang LH, Huang C, Li D. The effect of pain-education nursing based on a mind map on postoperative pain score and quality of life in patients with colorectal cancer. *Medicine (Baltimore)* 2023;102(19):e33562. <https://doi.org/10.1097/MD.00000000000033562>.
- [10] Nakazawa Y, Miyashita M, Morita T, Umeda M, Oyagi Y, Ogasawara T. The palliative care self-reported practices scale and the palliative care difficulties scale: reliability and validity of two scales evaluating self-reported practices and difficulties experienced in palliative care by health professionals. *J Palliat Med* 2010;13(4):427–37. <https://doi.org/10.1089/jpm.2009.0289>.
- [11] Lazenby M, Ercolano E, Schulman-Green D, McCorkle R. Validity of the end-of-life professional caregiver survey to assess for multidisciplinary educational needs. *J Palliat Med* 2012;15(4):427–31. <https://doi.org/10.1089/jpm.2011.0246>.
- [12] Phillips JL, Heneka N, Hickman L, Lam L. Self-perceived pain assessment knowledge and confidence (self-PAC) scale for cancer and palliative care nurses: a preliminary validation study. *Pain Manag Nurs* 2018;19(6):619–26. <https://doi.org/10.1016/j.pmn.2018.07.008>.
- [13] Hökkä M, Martins Pereira S, Pölkki T, Kyngäs H, Hernández-Marrero P. Nursing competencies across different levels of palliative care provision: a systematic integrative review with thematic synthesis. *Palliat Med* 2020;34(7):851–70. <https://doi.org/10.1177/0269216320918798>.
- [14] An R, Zhang SF, Huang XX, Zhao XY, Cao T, Bai L, et al. Self-reported practices, competence and difficulties towards palliative care among nurses: a cross-sectional study. *Eur J Cancer Care* 2022;31(6):e13688. <https://doi.org/10.1111/ecc.13688>.
- [15] Li WY, Fang Y, Liang YQ, Zhu SQ, Yuan L, Xu Q, et al. Building bridges of excellence: a comprehensive competence framework for nurses in hospice and palliative care—a mixed method study. *BMC Palliat Care* 2023;22(1):197. <https://doi.org/10.1186/s12904-023-01318-x>.
- [16] Zheng WJ, He F. The method for calculating the sample size in a cross-sectional survey. *Prev Med* 2020;32(6):647–8. <https://doi.org/10.19485/j.cnki.issn2096-5087.2020.06.028> [in Chinese].
- [17] Sato K, Inoue Y, Umeda M, Ishigamori I, Igarashi A, Togashi S, et al. A Japanese region-wide survey of the knowledge, difficulties and self-reported palliative care practices among nurses. *Jpn J Clin Oncol* 2014;44(8):718–28. <https://doi.org/10.1093/jcco/hyu075>.
- [18] Kudubes AA, Bektas M, Ayar D, Bektas I, Ok YS, Altan SS, et al. Palliative care difficulties and psychometric properties of the Turkish version of the self-esteem based palliative care practice scale. *Int J Caring Sci* 2019;12(1):162–75.
- [19] Fu J, Lin HJ, Mao J, Ni P. Translation of the palliative care self-report practice scale (PCPS): Testing of reliability and validity. *J Nurs Sci* 2021;36(21):78–80.
- [20] Edwards RL, Bakitas M, Li P, Spence D, Kahwa E, Stoltenberg M, et al. Adaptation and psychometric testing of the end-of-life professional caregiver survey in Jamaica. *BMC Health Serv Res* 2023;23(1):498. <https://doi.org/10.1186/s12913-023-09497-2>.
- [21] Garcia ACM, Damasceno Spineli VMC, Eduardo AHA, Meireles E, Moreira de Barros GA, Lazenby M. Translation, cultural adaptation, and validation of the Brazilian Portuguese version of the end-of-life professional caregiver survey. *Palliat Support Care* 2020;18(5):569–74. <https://doi.org/10.1017/S1478951519000993>.
- [22] Zou ZJ, Bai JB, Gu YH, Zou QH, Xiao CH, Yang J, et al. Cultural adaptation and psychometric evaluation of the Chinese version of the nurse-specific end-of-life professional caregiver survey: a cross-sectional study. *BMC Palliat Care* 2021;20(1):32. <https://doi.org/10.1186/s12904-021-00725-2>.
- [23] Lv FF, Long TL, Jia J, Nie XF. Application of self-perceived pain assessment knowledge and confidence scale among palliative care medical staff. *Chinese Journal of Social Medicine* 2024;41(2):200–4 [in Chinese].
- [24] Kodama K, Kanke S, Kassai R. Palliative care practices and their relationship to training: a cross-sectional study of community-oriented physicians. *Fukushima J Med Sci* 2024;70(3):141–51. <https://doi.org/10.5387/fms.23-00007>.
- [25] Adeyemi OJ, Siman NN, Goldfeld KS, Cuthel AM, Bouillon-Minois JB, Grudzen CR. Emergency providers' knowledge and attitudes toward hospice and palliative care: a cross-sectional analysis across 35 emergency departments in the United States. *J Palliat Med* 2023;26(9):1252–60. <https://doi.org/10.1089/jpm.2022.0545>.
- [26] López-Panza ER, Pacheco-Roys VC, Fernández-Ahumada KJ, Díaz-Mass DC, Expósito-Concepción MY, Villarreal-Cantillo E, et al. Competencies of the nurses in the limitation of therapeutic effort in the intensive care unit: an integrative review. *Int J Nurs Sci* 2023;11(1):143–54. <https://doi.org/10.1016/j.ijnss.2023.12.011>.
- [27] Back AL. Patient-clinician communication issues in palliative care for patients with advanced cancer. *J Clin Oncol* 2020;38(9):866–76. <https://doi.org/10.1200/JCO.19.00128>.
- [28] Xu YF, Zhang SW, Wang JR, Shu ZQ, Jing LM, He JJ, et al. Nurses' practices and their influencing factors in palliative care. *Front Public Health* 2023;11:1117923. <https://doi.org/10.3389/fpubh.2023.1117923>.
- [29] Zhu LH, Zhang N, Hu YJ, Xu Y, Luo TW, Xiang YQ, et al. Influencing factors of knowledge, attitude and behavior in children's palliative care among pediatric healthcare workers: a cross-sectional survey in China. *BMC Palliat Care* 2023;22(1):67. <https://doi.org/10.1186/s12904-023-01187-4>.
- [30] Huang YL, Yates P, Thorberg FA, Wu CJ. Influence of social interactions, professional supports and fear of death on adults' preferences for life-sustaining treatments and palliative care. *Int J Nurs Pract* 2022;28(4):e12940. <https://doi.org/10.1111/ijn.12940>.
- [31] Zhang A, Fu H. The impact of palliative care and nursing intervention on the psychology and quality of life of elderly patients with colorectal cancer. *JAMA Oncol* 2022;2022:7777446. <https://doi.org/10.1155/2022/7777446>.
- [32] van den Besselaar BN, van Hof KS, Sewnaik A, Baatenburg de Jong RJ, Offerman MPJ. Electronic health in the palliative care pathway for patients with head and neck cancer. *JAMA Otolaryngol Head Neck Surg* 2024:e243691. <https://doi.org/10.1001/jamaoto.2024.3691>.
- [33] Fang P, Tan LH, Cui JX, Yu LP. Effectiveness of acceptance and commitment therapy for people with advanced cancer: a systematic review and meta-analysis of randomized controlled trials. *J Adv Nurs* 2023;79(2):519–38. <https://doi.org/10.1111/jan.15543>.
- [34] Yu CH, Chen CM, Lin YL. Changes in perceived distress among patients receiving inpatient palliative care. *Support Care Cancer* 2024;32(12):820. <https://doi.org/10.1007/s00520-024-09033-w>.
- [35] Tan JYB, Zhai JX, Wang T, Zhou HJ, Zhao I, Liu XL. Self-managed non-pharmacological interventions for breast cancer survivors: systematic quality appraisal and content analysis of clinical practice guidelines. *Front Oncol* 2022;12:866284. <https://doi.org/10.3389/fonc.2022.866284>.
- [36] Egerod I, Kaldan G, Nordentoft S, Larsen A, Herling SF, Thomsen T, et al. Skills, competencies, and policies for advanced practice critical care nursing in Europe: a scoping review. *Nurse Educ Pract* 2021;54:103142. <https://doi.org/10.1016/j.nepr.2021.103142>.
- [37] Mosoiu D, Payne S, Predoiu O, Arantzamendi M, Ling JL, Tserkezoglou A, et al. Core palliative care research competencies framework for palliative care clinicians. *J Palliat Med* 2024;27(4):471–80. <https://doi.org/10.1089/jpm.2023.0399>.
- [38] Mascio R, Best M, Lynch S, Phillips J, Jones K. Factors influencing nurse spiritual care practices at the end of life: a systematic review. *Palliat Support Care* 2022;20(6):878–96. <https://doi.org/10.1017/S1478951521001851>.
- [39] Rababa M, Al-Sabbah S, Hayajneh AA. Nurses' perceived barriers to and facilitators of pain assessment and management in critical care patients: a systematic review. *J Pain Res* 2021;14:3475–91. <https://doi.org/10.2147/JPR.S32423>.
- [40] Lundin E, Godsken TE. End-of-life care for people with advanced dementia and pain: a qualitative study in Swedish nursing homes. *BMC Nurs* 2021;20(1):48. <https://doi.org/10.1186/s12912-021-00566-7>.
- [41] Yang B, Cui Z, Zhu XQ, Deng MH, Pan Y, Li RX, et al. Clinical pain management by a multidisciplinary palliative care team: experience from a tertiary cancer center in China. *Medicine (Baltimore)* 2020;99(48):e23312. <https://doi.org/10.1097/MD.00000000000023312>.
- [42] Chapman EJ, Edwards Z, Boland JW, Maddocks M, Fettes L, Malia C, et al. Practice review: evidence-based and effective management of pain in patients with advanced cancer. *Palliat Med* 2020;34(4):444–53. <https://doi.org/10.1177/0269216319896955>.
- [43] Chan AY, Ge MQ, Harrop E, Johnson M, Oulton K, Skene SS, et al. Pain assessment tools in paediatric palliative care: a systematic review of psychometric properties and recommendations for clinical practice. *Palliat Med* 2022;36(1):30–43. <https://doi.org/10.1177/02692163211049309>.
- [44] Edwards RL. Palliative care experiences and educational needs of healthcare interprofessionals in Jamaica: a mixed methods study. *The University of Alabama at Birmingham*; 2022.
- [45] Merfeld EC, Blitzer GC, Kuczmaraska-Haas A, Pitt SC, Chino F, Le T, et al. Women oncologists' perceptions and factors associated with decisions to pursue academic vs nonacademic careers in oncology. *JAMA Netw Open* 2021;4(12):e2141344. <https://doi.org/10.1001/jamanetworkopen.2021.41344>.
- [46] National Health Commission of the People's Republic of China. The general office of the national health commission launches the third batch of palliative care pilot work. *Shanghai Nursing* 2023;23(10):5. [in Chinese].
- [47] National Health Commission of the People's Republic of China. Basic standards and management Regulations for palliative care center (trial). *Chi Nurs Manage* 2017;17(3):289–90 [in Chinese].