

A Review on the Application of Hospice Care in Patients with Advanced Cancer

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Abstract: Hospice care is to improve the quality of life and help patients die comfortably, peacefully and dignified by controlling pain and discomfort symptoms and providing physical, psychological and spiritual care and humanistic care in the final stage of the patient's life. Hospice care clients were primarily cancer patients at first and then slowly extended to other critically patients. Hospice care can alleviate the physical, psychosocial and mental problems of patients with advanced cancer, meet the diversified and multi-level health service needs of patients, improve the quality of life of patients and their families, and also save medical expenditure and improve the efficiency of medical resources. At present, there were few studies on hospice care for Chinese patients with advanced cancer. In this study, the needs of hospice care for patients with advanced cancer were reviewed from physical comfort and pain reduction, dignity maintenance, social support, and help calm death, and specific screening and evaluation tools for hospice care for patients with advanced cancer. And this study was summarized to review the influencing factors of hospice care in order to provide a reference for clinical hospice care practice for patients with advanced cancer in China.

Keywords: advanced cancer, hospice care, influencing factors, clinical practice, evaluation tools

Introduction

Advanced cancer refers to cancer in which treatment is no longer effective, and the disease is considered difficult to cure, and the patient's condition is gradually deteriorating.¹ Cancer is one of the major diseases that seriously threaten human health, and its incidence continues to increase.² With the development of medical technology, the terminal stage of advanced cancer patient life may be prolonged, but it has not significantly succeeded in improving the cure rate of cancer.³ With the development of medical technology, the life of patients with advanced cancer is prolonged, but the physical function of patients is declining, the quality of life is decreasing, and the degree of dependence on the lives of caregivers is becoming stronger. At the same time, patient privacy is not protected, due to the lack of independent mobility, patients need to be cared for all the time, lack privacy space and time. This leads to a gradual loss of the patient "s self-worth, causing the patient" s self-esteem to decline and dignity to be compromised.⁴ According to statistics, in 2020, there were 19.29 million new cases of cancer and 10 million deaths each year worldwide.⁵⁻⁷ In China, there were 4.29 million new cancer cases and more than 2.8 million deaths among cancer patients in 2015.⁸ Cancer is the leading cause of death in China, with a mortality rate of 164.35/100,000 in urban residents and 154.98/100,000 in rural dwellers. In addition, the number of cancer deaths in China increased by 73.8% from 2000 to 2011, and the number of people requiring hospice care surged.⁸ In 2017, China issued the Guidelines for Practice of Hospice Care (Trial). Patients can obtain hospice care services if they meet the following conditions: (1) end-stage disease, symptoms. (2) refuse examination, diagnosis, and treatment of the primary disease. (3) The concept of receiving hospice care has the demand and willingness of hospice care. This study summarized the hospice care needs of patients with advanced cancer and the current situation of hospice care, and analyzed the influencing factors of hospice care needs in order to provide a reference for better clinical practice of hospice care.

Life Status of Patients with Advanced Cancer

In terms of health service utilization, it is very common for patients to receive aggressive treatment at the end stage of life. As death approaches, the proportion of patients using chemotherapy, emergency department, hospitalization, and ICU increases dramatically during the three months before patient death.^{9–11} Up to 91.97% of urban patients with advanced cancer were hospitalized in the last trimester of life, with 2.13 hospitalizations per capita and 41.13 hospitalizations per capita, and 72.19% of rural cancer patients were hospitalized, with 2.02 hospitalizations per capita and 27.22 hospitalizations per capita in China.¹² Chemotherapy is a common method used for palliative care in patients with advanced cancer, which can reduce the patient's pain and play a role in slowing the further progression of advanced cancer. The proportion receiving chemotherapy in the last month increased by 14% compared with the last two months of patient life,¹³ and in the last month of life, about 20% of patients received chemotherapy or radiotherapy, and about 10% used the ICU.¹¹ In terms of medical costs, the average cost of treatment for cancer is as high as \$ 14,000 – \$ 52,000, far exceeding \$ 7000 – \$ 28,000 for general major diseases in China. With the development of the disease course, the cost of cancer treatment is distributed in a U-shaped pattern,^{14–16} and during cancer treatment, the second year after diagnosis and the last year of life are the periods of the most intensive resources and costs, and the cost rises dramatically as death approaches.¹⁷ Treatment costs occurring in the last trimester of life of cancer patients account for approximately 40% of overall health care expenditures, with hospital costs accounting for approximately 70% of overall end-of-life costs.¹² There is still a dearth of research on hospice care and place of death in terms of place of death. Influenced by the development of modern medicine, the proportion of hospice deaths in Chinese hospitals increased from 19.84% in 2005 to 37.56% in 2008.^{18,19} However, there have not been any national reports in recent years regarding the location of population-based deaths. In terms of quality of life, the quality of life of patients with advanced cancer at the end of life is worrisome, there is a very low sense of well-being, often bearing symptoms such as pain, loss of appetite, fatigue, weakness and dyspnea, and psychological stress.²⁰ Palliative services are underutilized, and palliative care has been received in a very low proportion of cancer patients in mainland China (2.68% - 12.31%).¹² In summary, patients with advanced cancer have excessive medical treatment, high medical costs, poor quality of life, and palliative care services are not fully utilized during the end of life. The vast majority of patients with advanced cancer suffer from “economic poverty”, “physical poverty” and “mental poverty”, which together cause “end-of-life poverty” in patients with advanced cancer.²¹ It is urgent to improve the quality of hospice care for patients with advanced cancer and get them out of “poverty at the end of life”.

Current Status of Hospice Care

The concept of end-of-life care first originated in England. The world's first modern hospice facility was built in England in 1967 and is staffed by British senior nurse Cicely Sanders.²² In the 1970s and 1980s, the concept of end-of-life care spread from the United Kingdom to other countries, while new thinking, change suggestions, and various debates on active treatment, end-of-life, location of death, and quality of death formed a rather influential Good Death Movement. In the 1990s, the World Health Organization placed hospice care on the agenda of work as one of four priorities.²³ The advent of hospice care marks the ultimate formation of a modern health care system.²⁴ At present, patient-centered palliative care and hospice care have become very popular in most developed countries such as the United Kingdom, Australia, the United States, Canada, and other countries, for example, the United Kingdom Health Department established the National Hospice Care Program in 2004, and subsequently issued a series of national strategy documents to incorporate hospice care into the health insurance system (NHS) and social welfare system.²⁵ There are more than 5800 hospice hospitals and facilities in the United States, 56% of which provide home hospice care services. In 2015, 1381,182 Medicare beneficiaries had received hospice care services: about 46% of hospices had received at least one day of hospice care before death and died at hospice hospitals.²⁶ In a report by the National Commission on Hospice Care, *Near Death: Improving Hospice Care*, it is recommended that all physicians throughout the vast healthcare system in the United States should be educated about death.²⁷ At present, hospice care in China is still in its infancy. In the 1990s, China firstly established a hospice care institution in Tianjin, marking the beginning of hospice care in China. In 2017, China issued the Guidelines for the Practice of Hospice Care (Trial) and the Basic Standards and Management

Specifications for Hospice Care Centers (Trial), which put forward guidelines for the number of beds, department setting, staffing, building requirements, equipment configuration and other hardware facilities in Hospice Care Centers, and developed specifications for software services such as symptom control, comfort care, psycho-psychiatric and social support in Hospice Care Centers. The promulgation of these documents has standardized hospice care in China.

Assessing the needs of patients with advanced cancer is one of the key issues in palliative care and is the basis for providing personalized care. Need assessment can identify areas that patients believe are important and where they need help and support and provide precise intervention, thereby improving their physical and mental health and care satisfaction, and further improving the quality of care for cancer patients, and failure to fully meet the needs of patients can seriously affect the quality of life of end-of-life patients.^{28–30} The needs of patients vary according to their disease diagnosis and different stages of disease development. If some studies have pointed out that for patients with end-stage chronic diseases, social needs are particularly important, while for patients with end-stage cancer, physical symptoms, opportunities to share emotions and religious needs are more important. Nurses should prepare to talk about death, existence and mental problems with patients when providing care for patients with end-stage cancer.³¹

Advanced cancer care needs vary according to age, sex, cancer type, personal expectations, and existing palliative services. Continuous, systematic, personalized needs assessment is the core of hospice care, and can accurately assess the needs of patients through effective communication with patients, caregivers, nursing staff, and health professionals to reduce symptom distress, improve daily function, and quality of life. Vivian et al³² investigated the quality of life, disease-related and treatment-related symptoms, and unmet needs of 102 patients with advanced ovarian cancer who survived at least 6 months using the Cancer Patient Need at the End-of-life Screening Tool (NEST), and the results showed that the most common disease-related symptoms of patients with advanced cancer were fatigue (92%), anxiety (89%), and sleep difficulties (76%), and the most common unmet needs were symptom dimensions. Buzgova et al³³ evaluated palliative care needs in 349 in patients with advanced disease using the Patient Needs Assessment in Palliative Care (PNAP) and showed that patients had the lowest satisfaction with physical symptoms, and other unmet needs included continuing normal activities (44%), having the opportunity to participate in religious or other ceremonies (36%), fatigue (32%), fear of relying on help from others (26%), and sharing feelings about death and dying (16%). A systematic review conducted in 2016 by Moghaddam et al³⁴ included 23 studies and showed that unmet needs were identified in many areas, with information (30% to 55%), psychology (18% to 42%), physical (17% to 48%), and function (17% to 37%) being prevalent. Because there is considerable heterogeneity in the evaluation methods and reporting methods of hospice care needs of patients with advanced cancer, it is difficult to carry out homogenization analysis. At the same time, the differences in the performance between studies also explain the importance of personalized evaluation of hospice care needs.

Needs Assessment Tools for Hospice Care Problems and Needs in Palliative Care

Problems and Needs in Palliative Care (PNPC) was developed by Osse et al³⁵ in 2004 and consists of two parts: the problem part and the care needs. It contains activities of daily living, physical symptoms, role activities, economic/administrative problems, social problems, psychological problems, spiritual problems, autonomy, nine dimensions of information needs, 138 items, each item determines whether it is a patient's need through two questions: ① whether this is a problem for you; ② whether you need professional help for this problem. A higher score indicates a greater need for end-of-life care. Cronbach's α coefficient of the scale ranged from 0.65 to 0.70. In 2007, Osse et al³⁶ developed a simple scale PNPC-sv, which was reduced to 33 items. The scale was more concise and could more quickly and effectively identify the problems affecting the quality of life and nursing needs of patients, with good universality and reliability. In 2019, Wang et al³⁷ conducted a Chinese version of this scale and verified the applicability of the Chinese version of PNPC-sv in the assessment of hospice care needs in patients with advanced cancer, with a Cronbach's α coefficient of 0.88 and an average completion time of 11 min. The PNP-sv operation method is simple and easy to understand. This scale is not only helpful to evaluate the needs of cancer patients for hospice care, but also helps to clarify the degree of needs of patients for help, and can help medical staff determine the needs of cancer patients, so that the diagnosis, treatment and nursing measures are better closely related to the needs.

Palliative Care Needs Assessment Tool

Palliative Care Needs Assessment Tool (PC-NAT) was developed in 2008 by Australian scholar Waller et al³⁸ to assess the care needs of patients with advanced cancer and caregivers, and consists of five parts, the first part is a review of professional palliative care services, including three items, that is, whether there is a lack of caregivers, whether patients or caregivers request referral to professional palliative care services, and whether health professionals have needs in providing professional care. Part 2 consists of 7 items assessing the patient's physical condition, including physical condition, functional status change, psychological, informational, spiritual/existential, health beliefs/cultural/social, economic/legal aspects. Part 3 is to assess the ability of the caregiver/family primary caregiver and consists of five items, namely physical condition, functional status change, psychological, information, family, and relationship aspects. Part 4 assesses the health status of the caregiver and includes 2 items, namely physical, psychological problems and grief at bereavement. Part 5 consists of an item assessing whether the patient needs further intervention by a special palliative care service. The response options for Parts 1 and 5 were "Yes" or "No"; items in Parts 2 through 4 were assessed with "None", "Sometimes", "Very" based on the level of concern they aroused. Waller et al³⁹ validated the validity, reliability, and clinical feasibility of PC-NAT in the needs assessment tool for patients with advanced cancer in 2010. PC-NAT does not have a specific scoring system, given the differences in the ability of the professionals involved to provide the patient with the care required. PC-NAT can help health professionals identify unmet needs of patients and thus implement service interventions that are more closely linked to needs.

Hospice Care Needs Questionnaire for Cancer Patients

Hospice care needs questionnaire for cancer patients was developed by Wu Honghan et al⁴⁰ in 2020 to evaluate the care needs of hospice care patients and consists of a total of 28 items, which are divided into six dimensions: physical, psychological, environmental, social support, disease-related knowledge and information needs. A total of 198 patients with advanced cancer were investigated by questionnaire. The results showed that the Cronbach's α coefficient of the questionnaire was 0.934, and the Cronbach's α coefficient of each factor was 0.789 ~ 0.900. The results showed that the internal consistency of the questionnaire was good, the test-retest reliability of the questionnaire was 0.907, and the test-retest reliability of each factor was 0.737 ~ 0.896, indicating that the questionnaire had good stability and could be used as an evaluation tool for the safety care needs of cancer patients. At present, the questionnaire has only been validated in 198 patients with advanced cancer, and larger sample studies are needed to verify the generality of the questionnaire in the future.

Anxin Card

Anxin Card is a poker card designed by Chen Minghui, head of Chinese American Coalition for Compassionate Care (CACCC) in 2014 to meet Chinese cultural characteristics based on end-stage patient care needs. Anxin card contains 54 cards, each describing a desire for end-of-life. Among them, spades, red hearts, plum blossom, and squares represent physical needs, spiritual needs, interpersonal needs, and financial needs, respectively, and additionally contain two special desire cards.⁴¹ The content on the peace card can guide patients to think about their important life issues and provide a reference for the development of advance care plans. Litzelmn et al⁴² carried out a feasibility study of Anxin Card in 33 patients to identify the care needs and goals of end-of-life patients and showed that Anxin Card could promote the importance of patients considering common care problems at the end of life in an impedance free environment compared with traditional methods, and could efficiently and accurately determine the end-of-life care goals of patients, laying the foundation for the development of advance care plans. Delgado Guay et al⁴³ used a randomized controlled trial to compare the effectiveness of different tools in assessing patients' end-of-life wishes between the two groups, and the results showed that there was no significant difference in desire selection between the Anxin Card group and the conventional group, and Anxin Card as a tool for "death education" did not increase patients' death anxiety. At present, the application of Anxin Card Activity in critically ill patients in some areas of China and American Chinese is more popular.⁴⁴ Cheng Fang et al⁴⁵ carried out peace of mind tea activities in 33 patients with lung cancer and shared their experiences. The results showed that peace of mind tea house activities could assist in opening the door of patient death education and have a significant effect in understanding the wishes of lung cancer patients at the end of life.

Need at the End-of-Life Screening Tool

Need at the End-of-life Screening Tool (NEST) was developed by Emanuel et al⁴⁶ in 2001 for brief screening of hospice clinical needs. The instrument consists of 13 items, and four themes corresponding to each letter of the NEST were assigned for ease of memory, namely social demands, concerns present, symptoms, and therapeutic interactions. Screening usually consists of 2 levels, the first level is screening through these 13 items, each question assesses the degree to which different needs are met from the patient's perspective, and the subject scores each item in the range of 0 to 10, with higher scores indicating higher severity of needs. Level 2 evaluation refers to further evaluation of 48 questions that are extended by these 13 questions. Studies have shown that the tool has a sensitive and reliable bedside problem and can quickly screen and evaluate the overall care requirements of patients at the end of life. The use of this screening tool can improve the patient care needs record, improve the nursing process according to the patient's needs, and improve the nursing results and nursing quality.

Patient Needs Assessment in Palliative Care

Patient Needs Assessment in Palliative Care (PNAP) is a scale developed by Buzgova et al³³ by assessing the importance and satisfaction of the needs of patients receiving hospice care services and consists of 40 items and 7 dimensions, including physical symptoms, social domains, respect and support by health professionals, meaning of life, autonomy, opportunities to share emotions, and religious needs. Each item is asked to answer questions on both importance and satisfaction, with the question "In the past week, the importance of this item for you", which is assessed using the Likert 5-level scoring method, ranging from "not at all important" to "very important" in 1 to 5 points; the question on satisfaction is "have you met this", and the option is assessed using the Likert 5-level scoring method, ranging from "not met at all" in 1 to 5 points.⁴⁷ PNAP has good acceptability, internal consistency and effectiveness, can accurately evaluate the needs of hospice care and demand satisfaction of patients, and helps medical staff to provide targeted diagnosis, treatment and nursing measures for patients. However, its long filling time may increase the burden on patients to answer questions. Currently, there is no translated or revised version of this scale, and subsequent large-sample, multicenter validation is lacking, and its clinical applicability needs further validation.

Resident Assess Instrument for Palliative Care

Resident Assess Instrument for Palliative Care (RAI-PC) is a standardized assessment tool developed by RAI-PC in 2003 to appropriately assess the needs of hospice patients and has been tested in Canada, Sweden, Spain, and the United States.⁴⁸ The evaluation included basic information, medical history and health status, skin condition, oral cavity and nutritional status, communication, cognitive ability, mental health, functional status, mood, drugs, self-control, treatment and measures, responsibility/advance order, social support, evaluation information, and discharge.⁴⁹ A systematic review by Kirsten et al⁵⁰ in 2014 showed that the RAI-PC Hospice Assessment Scale met the requirements for multidimensional, fully humanized assessment of patients receiving hospice care.

Sheffield Assessment and Referral Care Scale

Sheffield Assessment and Referral Care Scale (SPARC) is a multidimensional screening tool to assess supportive care and end-of-life care needs for patients with advanced cancer, which contains 45 items: communication and information, physical symptoms psychological problems, religious and spiritual problems, independence and mobility, family and social problems, treatment, and personal problems.⁵¹ It provides a global assessment of cancer patients, facilitates patient understanding and follow-up tracking, and is suitable for patients of all ages and in inpatient, outpatient, and residential communities, with Cronbach's α coefficients ranging from 0.65 to 0.86.⁵² Burton et al⁵³ showed that the tool was also suitable for patients with acute stroke and interstitial lung disease.

There are few reports on the use of the above multiple assessment scales (Table 1) in China, and in order to promote the practice of hospice care in Chinese patients with advanced cancer, it is necessary to select the appropriate assessment scale according to different needs of patients. At the same time, an assessment scale suitable for Chinese patients should be developed according to the Chinese health care system as well as culture.

Table I Needs Assessment Tools for Hospice Care

	Needs Assessment Tools	Scale Content
Osse et al ³⁵	Problems and Needs in Palliative Care	Activities of daily living, physical symptoms, role activities, economic/administrative problems, social problems, psychological problems, spiritual problems, autonomy, information needs 9 dimensions, 138 items
Osse et al ³⁶	Problems and Needs in Palliative Care questionnaire short version	Activities of daily living, physical symptoms, role activities, economic/administrative problems, social problems, psychological problems, spiritual problems, autonomy, information needs 9 dimensions, 33 items
Wang et al ³⁷	Chinese version Problems and Needs in Palliative Care questionnaire short version	Evaluate cancer patients' need for end-of-life care and identify patients' need for help
Waller et al ³⁸	Palliative Care Needs Assessment Tool	Contains 5 sections: review of professional palliative care services, assessment of the patient's physical condition, assessment of the caregiver's/family's primary caregiver's competence, assessment of caregiver's health status, assessment of patient's need for further intervention with professional palliative care services
Wu HH et al ⁴⁰	Hospice Needs Questionnaire for Cancer Patients	The scale consists of 28 items divided into six dimensions: physical, psychological, environmental, social support, disease-related knowledge and information needs
Chou WY et al ⁴¹	Anxin Card	Containing 54 cards, each describes a desire requirement at the end of life. Among them, black peach, red heart, plum blossom, and squares represent physical needs, spiritual needs, interpersonal needs, and financial needs, respectively
Emanuel et al ⁴⁶	Need at the End-of life Screening Tool	Including 13 items, 4 topics, ie, social needs, concerns present, symptoms, and therapeutic interactions
Steindal SA et al ⁴⁸	Resident Assessment Instrument for Palliative Care	Assessments included basic information, medical history and health status, skin condition, oral and nutritional status, communication, cognitive ability, mental health, functional status, mood, medications, self-control, treatments and measures, responsibilities/orders, social support, assessment information, and discharge
Hughes P et al ⁵¹	Sheffield Assessment and Referral Care Scale	Multidimensional screening tool to assess supportive care and end-of-life care needs for patients with advanced cancer, which contains 45 items: communication and information, physical symptoms psychological problems, religious and spiritual problems, independence and activity, family and social problems, treatment and personal problems

Implementation Effect of Hospice Care

Physical Comfort and Less Pain

The focus of care for patients with end-stage cancer in the final stages of life is no longer to treat the disease, but to make the patient painless and peacefully accept death. Zhuang Juping et al⁵⁴ investigated the nursing needs of 128 patients with advanced cancer, and the results showed that patients with advanced cancer had a higher demand for hospice care, and the contents with a higher score in terms of physiological needs included ensuring sleep quality, effectively controlling pain, and keeping the skin and mouth clean and intact. Long-term disease distress and multi-cycle treatment bring great pain to patients, seriously affecting the daily life of patients, patients cannot walk for a long time, do housework, do leisure and recreational activities, and even lose their self-care ability, patients have to rely on others, will make patients feel helpless.⁵⁵ In the process of implementing basic care, the needs, experiences and feelings of patients should be respected, and the main caregivers of families should be encouraged and instructed to participate in the comfort care of end-of-life patients, enhance companionship and emotional communication, and achieve the purpose of maintaining cleanliness and comfort, maintaining dignity, and ensuring safety. Masel et al⁵⁶ learned through in-depth interviews with advanced cancer patients and palliative care teams that the placement of green plants in a convalescent environment can positively stimulate patients, arouse good memories of patients, and distract patients. In addition, family members can be added to the ward setting to visit the companionship place to avoid the patient died without relatives companionship

regret. In the choice of place of death, some patients prefer to die alone, hoping that the heart is calm and the environment is quiet, while some patients hope to spend the last time at home in places they like and are safe, and some are willing to choose to spend the last time at home, with loved people accompanied around them.⁵⁷ It is suggested that the physical environment of hospice ward and hospice convalescent institution should be designed with the concept of humanistic care and fully meet the physical, psychological and social needs of patients.

Maintaining Dignity

Seeking meaning of life is the main impetus of human life, and different stages of life have different pursuits. The process of finding meaning of life is to find the value of self-existence again, so as to produce a sense of identity with their own life. Geller et al⁵⁸ showed that active search for life significance can achieve harmony and stability in all aspects of the patient's body, psychology and spirit, and face death with dignity and achieve a good end. Patients hope that they will not become a burden on their families,⁵⁹ and patients hope to maintain clear thinking during daily activities. We hope to be able to play their own value for the family to do their own responsibility, for the family to make future life arrangements. Emily et al⁶⁰ found through multiple in-depth interviews with patients with advanced lung cancer that life significance is an important content affecting the quality of life of patients, and finding life significance can help patients find the reasons, hope and sense of accomplishment of life, and achieve self-transcendence. With the increasing awareness of public rights protection, the call to protect the right to know the patient is increasing, and the patient urgently hopes to understand the condition of the disease, medical measures and medical risks. Only after full informed consent, the patient may make choices conducive to himself/herself and in line with his/her wishes. Konstantinidis et al³¹ conducted an in-depth interview with 95 patients with advanced solid tumors and pointed out that 73.7% of patients wanted to understand their disease information, 56.8% wanted to understand their treatment information, 51.6% wanted to understand their examination information, and 50.5% wanted to understand their diagnostic information, especially patients living in cities or regions farther away from the hospital had a higher demand for information. A systematic review published in 2019 reviewed end-stage patient expectations and needs for death, in which the patient's dignity needs mentioned that many patients crave attention to their right to know and that patients felt entitled to decide when they chose to stop treatment.⁶¹ There are also many patients who want to understand their disease diagnosis results, which is conducive to them to well arrange their uncompleted matters, see the person who wants to see, make arrangements for their own aftermath, and make full preparations for dealing with family internal problems, financial problems, and death.

Calm Death

Some religions believe that the end of life is only a process of life, not the end of life. Terminal patients in China often have fear and anxiety due to the unknown after death, which will cause great restlessness of patients and seriously affect the quality of death. Yang Qing et al⁶² conducted an in-depth interview on the care needs of 9 patients with advanced cancer and found that some patients had religious belief needs and hoped that the hospital could set up a Buddhist hall, read the Diamond Meridian and Great Sadness Charm in the ward, and could talk about Jesus with other patients, hoping to help them and relieve or alleviate psychological pain. Fifty percent of hospice patients in Diane et al⁶³ identified prayer as a common need. The most frequently mentioned unmet need was for religious service. Religious beliefs can empower people, and patients adhere to the concept of "being with God, obeying God's arrangement, and living in peace with God" and feel religious support, thereby enhancing the courage to fight cancer. It is suggested that medical staff should pay more attention to spiritual beliefs in the process of providing nursing care for patients at the end of their lives. Fear of death refers to the emotional reactions such as fear, worry and reluctance of the patient when faced with the approaching of death, which originate from the patient's uncontrollable perception of the unknown world of death. Tang et al⁶⁴ interviewed 14 white women with metastatic breast cancer and conducted an audio-recorded interview over the phone for 30 to 90 min using open-ended questions to encourage patients to talk about their feelings, and the results showed that 71% of patients had fear of dying. Payne et al⁶⁵ used semi-structured interviews to understand the understanding of "good death" in 18 patients, and the results showed that patients believed that "good death" was characterized by "dying in sleep, dying quietly, without pain, and suddenly dying", that is, avoiding the fear of death and leaving peacefully. Liao

Jing et al⁶⁶ investigated the death view and its influencing factors of patients with advanced cancer in a tertiary care hospital, and the results showed that women had a higher degree of anxiety about death. McDonald et al⁶⁷ proposed that advanced cancer patients who had discussed hospice care were better able to participate in advance care plans and were able to face death with a calm attitude.

Hospice Care in Patients with Advanced Cancer

Advanced cancer poses difficult and complex situations for patients, while family caregivers face high levels of distress. In this complex situation, end-of-life care becomes increasingly important and demand increases. Hospice care aims not only to improve the quality of life of patients, but also to improve the quality of life of their families and their caregivers. Patients with advanced brain malignancies frequently present with progressive focal neurological deficits with a wide range of symptoms: cognitive deficits, paralysis, seizures, fatigue, dysphagia, headache, somnolence, loss of consciousness, incontinence, and psychosocial burden.^{68–70} Patients with advanced brain malignancies therefore have an increasing need for end-of-life care. Xiao et al⁷¹ found through systematic analysis that there are multiple needs for end-of-life care for patients with advanced glioma, including physical, psychological, social and spiritual needs, and glioma patients should meet their personalized treatment needs, improve the quality of life of patients at the end of their lives, and reduce the family burden of patients. Koekkoek et al⁶⁹ reported that hospice care can reduce the pain of patients in the later stage of high-grade glioma patients, while improving the quality of life of patients in the later stage of life, and reducing the family burden of patients and their families.

Patients with advanced lung cancer also usually suffer from the pain caused by cancer. The emotional, social, spiritual and cultural phenomena of patients are factors that can also affect the pain.⁷² Hospice care can effectively improve the emotional, social and spiritual levels of patients at the end of life, thereby relieving the pain caused by cancer. Hou et al⁷³ found by analyzing the data of 69,414 patients with non-small cell lung cancer that the proportion of patients with metastatic non-small cell lung cancer receiving palliative care showed an increasing trend year by year, and receiving palliative care and hospice care at the end of their lives could reduce the pain of patients while reducing the medical costs of patients with end-stage lung cancer. Hwang et al⁷⁴ came to the same conclusion by analyzing data on palliative care for patients with advanced lung cancer in the United States, the use of hospice care in patients with advanced lung cancer increased year by year, and palliative care services were associated with reduced hospital costs. In contrast, however, life-sustaining treatment is associated with increased hospitalization costs. Triplett et al⁷⁵ investigated the impact of palliative care on patients in a sample of 6580 patients with advanced cancer and found that hospice care significantly reduced health care use among Medicare beneficiaries with advanced cancer, emphasizing the importance of early integration of palliative care with standard oncology care. Vincent Mor et al⁷⁶ concluded that hospice care is necessary for patients with advanced cancer by studying the clinical data of 13,085 patients with lung cancer, while hospice care can improve the life treatment of patients' lives, preserve the patient "life dignity, and reduce the patient" family burden, which is associated with lower medical costs.

Breast cancer is the most common tumor in women, and the survival rate of advanced breast cancer is only about three years.⁷⁷ Multiple organ metastasis often occurs in patients with advanced breast cancer, which exacerbates the patient's physical pain and seriously affects the quality of life of patients and their families.⁷⁸ A retrospective analysis by Bergqvist et al⁷⁹ found that hospice care for advanced breast cancer patients was influenced by multiple factors, whereas emergency room visits, hospitalizations, and in-hospital deaths were registered less frequently for advanced breast cancer patients receiving hospice care. Wan et al⁸⁰ analyzed 5481 patients with advanced breast cancer receiving palliative care and found that the effect of hospice care became more obvious with increasing patient age, and hospice care specifically significantly improved patients with advanced breast cancer. Joseph A. Greer et al⁸¹ showed that personalized hospice care needs to be developed for patients with advanced breast cancer, while increasing the length of hospice care is necessary. At present, in various types of advanced cancer, the increasing demand for hospice care can effectively improve the quality of life of patients in the later stages of life, reduce the pain of patients, and reduce the burden of life of patients and families.

Influencing Factors of Hospice Care

Sociodemographic Factors

It has been shown that younger age, living in rural areas, and female patients may have more unmet needs.⁸² In terms of age, some scholars have found that young patients need more support, mainly to seek the significance of life and reconcile with the disease, elderly patients believe that religious needs are important, with the highest satisfaction of life significance and reconciliation needs, while physical symptom needs are less important; in terms of gender, women express more needs compared with men, report more troublesome symptoms, and require more effective care.⁸³ In terms of education level, education level showed a negative correlation with spiritual needs, patients with higher education level had reduced disease burden, lower anxiety and depression levels, and relatively lower spiritual needs. In terms of religious beliefs, it has been shown that patients without religious beliefs have higher needs in the social sphere, respect and support of health professionals, meaning of life, reconciliation, and opportunities to share emotions.⁴⁷ Hospice needs assessment should be centered on the patient and his family, taking into account the patient 's cultural customs, living habits and other personalized characteristics.

In China, the traditional concept of life and death is also one of the barriers to the development of hospice care in China. Limited by the lack of traditional life and death outlook and life education, the Chinese people have a low recognition of hospice care services and become an important factor affecting the development of hospice care services in China. On the one hand, influenced by traditional ideas, Chinese people have negative attitude towards death and often fear avoiding it. Filial piety, on the other hand, further hinders children from choosing peaceful care at the end of their parents' lives. Because the choice of hospice care can easily be questioned as not filial piety, the public is under double pressure from the outside world and the ontology, often difficult to recognize and accept hospice care, hindering the intervention of professional institutions. Therefore, it is necessary to increase the publicity of life education, promote the further development of hospice care in China, and contribute to the calm death of patients at the end stage of life.

Disease-Related Factors

In terms of time to diagnosis, some researchers believe that patients with longer cancer diagnosis have higher spiritual needs, possibly because they are exposed to greater threats to life and will have more thinking in exploring the significance and purpose of life. In terms of disease type, Konstantinidis et al³¹ showed that more than half of patients with advanced breast and lung cancer reported more than 8 needs, especially the unmet need for supportive care when assessing patients with advanced lung cancer was significantly increased, and the main care needs included better symptom control, diet, dressing assistance, and better attention by nurses and others, and the analysis may be related to shorter life expectancy and many serious complications associated with lung cancer. In terms of accompanying symptoms, studies have shown that the accompanying symptoms of patients are related to spiritual needs, and persistent painful symptom distress will change the patient 's mentality, lose the pursuit of life significance, and doubt the existing value, thus causing confusion and desire for death on life significance.

Degree of Anxiety and Depression

Patients with end-stage cancer often experience anxiety, pessimism, hopelessness, depression and other adverse emotional and psychological problems due to protracted disease and decreased physical self-care ability. Patients with anxiety and depression have more unmet needs, and these patients have low needs in physical symptoms, social domains, and meaning of life, but are more eager to share emotions. Hocker et al⁸⁴ explored the factors associated with spiritual needs, and the results showed that anxiety was a significant predictor of spiritual needs, and the degree of anxiety was significantly correlated with the patient 's existing needs, inner calm and positive giving, and patients with lower levels of depression had higher spiritual needs for positive giving. Nursing staff should fully evaluate the psychological status of patients, identify patients with depression as soon as possible, ensure adequate psychological care, and timely meet their needs.

Social Support

End-stage cancer patients are under great physical and mental pressure, facing the fear of death and physical and mental pain often hope that someone can accompany around. Isaksen et al⁸⁵ found that spiritual needs of patients with advanced cancer are closely related to social support. Boyes et al⁸⁶ also confirmed that both lower social support and emotional support can greatly affect the unmet needs of patients, and patients with lower social emotional support will have higher unmet health information. Therefore, caregivers should take the initiative to create a harmonious and loving family atmosphere, with an equal, respectful, and receptive attitude, stand in the patient's position to consider the problem, care in life, spiritual comfort, and timely counseling and dissolving the patient's bad emotions.

Conclusion

Promoting hospice care for patients with advanced cancer is both a humanistic care and a favorable policy for a country. At present, cancer patients worldwide are increasing, hospice care demand is very large, there is a certain social basis, the promotion of hospice care has great practical significance. The need for end-of-life care varies among patients and is influenced by cultural background, family perceptions, personal roles, and experiences. Different assessment methods and tools have been used in studies on hospice care needs of patients with advanced cancer, including descriptive studies and different assessment tools, which reflect the limitations of hospice care needs assessment for patients with advanced cancer. Further exploration of needs assessment tools for patients with advanced cancer and interventions to address unmet needs is needed to promote the further development of hospice care and improve the quality of life of patients with advanced cancer. At present, the evaluation methods and tools for the use of hospice care in China remain to be further explored, and the existing evaluation methods and tools are optimized or new hospice care evaluation tools suitable for the use of advanced cancer in China are developed. At the same time, China should develop hospice care standards and measures suitable for its own national conditions according to the actual situation of its own medical institutions, strengthen the publicity and education of hospice care, and improve the EOL treatment of Chinese patients with advanced cancer.

Data Sharing Statement

All data generated or analyzed during this study are included in this published article.

Ethics Approval and Consent to Participate

An ethics statement is not applicable because this study is based exclusively on published literature.

Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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