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Construction of Palliative Care Service Mode for Patients with Advanced Cancer in Public Hospitals in China: A Stakeholder Perspective

HUANG Jidong

Doctor of Management

Supervisor:
PhD Henrique Manuel Duarte, Associate Professor,
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Marketing, Operations and General Management Department

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Abstract

This study explores the demands of the subjects related to hospice services in public hospitals, takes stakeholder theory as the theoretical basis, focuses on the participation motives of hospice service stakeholders, identifies the service subjects and interest relationships of the stakeholders, and applies the Colaizzi seven-step approach to distill the theme of the demands. The research systematically summarizes the multilevel impacts on the services of the various parties' demands and their interests and formulates indicators to the public hospitals' Accordingly, an evaluation system of hospice service indicators for patients with advanced cancer was developed in public hospitals. Taking the Hematology Oncology Department of the pilot hospital as the research object, the fuzzy comprehensive evaluation method was used to carry out comprehensive scoring, and the scoring results showed that the scoring results were in the range between average and better, and the scoring results were in line with the objective reality. This way it was concluded, that it provided an assessment tool for the objective quantitative evaluation of the quality of hospice services. On the basis of this study, this study deeply analyzes the actual operation of the hospice service in the pilot hospital, and systematically optimizes and adjusts its management mechanism. Through these empirical studies, this research aims improving the quality of hospice services in public hospitals, and exploring a hospice service management model for advanced cancer patients in public hospitals that is in line with the healthcare system in mainland China.

Keywords: public hospitals, advanced cancer, hospice service, service quality management
JEL: I11, I18

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Resumo

Este estudo explora as exigências dos sujeitos relacionados com os serviços de cuidados paliativos nos hospitais públicos para doentes com cancro, toma como base teórica a teoria stakeholders (partes interessadas), centra-se nos motivos de participação dos stakeholders nos serviços de cuidados paliativos, identifica os sujeitos dos serviços e as relações de interesse, utilizando a abordagem de Colaizzi em sete passos para descriminar os tipos de expectativas. A investigação resume sistematicamente os impactos nos vários níveis das exigências de todas as partes e dos seus interesses, e apresenta em conformidade os indicadores dos serviços de cuidados paliativos dos hospitais públicos. Assim, foi desenvolvido um sistema de avaliação dos indicadores dos serviços de cuidados paliativos para doentes com cancro implementado nos hospitais públicos. A investigação usou o Departamento de Hemato-oncologia do hospital-piloto como objeto de investigação, e foi utilizado o método de avaliação abrangente fuzzy para realizar uma pontuação abrangente. Os resultados da pontuação mostraram que valores se situavam entre a média e os valores mais elevados e que os resultados da pontuação estavam de acordo com a realidade objetiva. Conclui-se que a avaliação proporcionou uma ferramenta de avaliação quantitativa objetiva da qualidade dos serviços de cuidados paliativos. Com base nesta investigação, este estudo analisa profundamente o funcionamento real do serviço de cuidados paliativos no hospital piloto, e optimiza e ajusta sistematicamente o seu mecanismo de gestão. Através dos estudos empíricos pretendeu-se contribuir para a melhoria da qualidade dos serviços de cuidados paliativos nos hospitais públicos, e explorar um modelo de gestão dos serviços de cuidados paliativos para doentes com cancro avançado nos hospitais públicos que seja consistente com o sistema de cuidados de saúde na China continental.

Palavras-chave: hospitais públicos, doentes com tumores avançados, serviços de cuidados paliativos, gestão da qualidade do serviço
JEL: I11, I18

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摘 要

本研究以探究公立医院安宁疗护服务相关主体诉求，以利益相关理论为理论基础，聚焦于安宁疗护服务利益相关者的参与动机，识别利益相关者服务主体及利益关系，并运用Colaizzi七步法提炼出诉求主题，系统总结了各方诉求及其利益关系对服务产生的多层次影响，据此拟定公立医院晚期癌症患者安宁疗护服务质量评价指标体系。以试点医院血液肿瘤科为研究对象，采用综合模糊评价法进行综合评分，评分结果显示处于一般与较好之间，评分结果与客观实际相符，为安宁疗护服务质量的客观量化评价提供评估工具。在此研究基础上，本研究深入剖析了试点医院安宁疗护服务的实际运作情况，并针对其管理机制进行了系统性的优化调整。通过这一系列的实证研究，本研究致力于以提升公立医院安宁疗护服务质量为核心目标，探索一种符合中国大陆医疗体制的公立医院晚期癌症患者安宁疗护服务模式。

关键词：公立医院，晚期肿瘤患者，安宁疗护服务，服务质量管理

JEL: I11, I18

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Chapter 1: General Introduction

1.1 Research background

1.1.1 Low end-of-life quality of life for cancer patients in China

In early 2019, the National Cancer Center of China released a statistical report on the current state of cancer in China, revealing a severe reality: malignant tumors, commonly known as cancer, have become one of the major public health issues posing a significant threat to the health of Chinese residents. Compared to the data from the past decade, the incidence rate of malignant tumors is growing at an average annual rate of 3.9%, while the mortality rate is increasing by an average of 2.5% per year, accounting for 23.91% of all causes of death among residents (Zheng et al., 2019). Among the top ten countries in terms of the number of new cancer cases, China accounts for 23.7% of the total new cancer cases worldwide. At the same time, China also accounts for 30% of the global cancer death cases, ranking first in the world in both aspects of cancer statistics (Sung et al., 2021).

There are three main reasons why China has the highest number of new cancer cases and death rates in the world. The first reason is China's large population base and the increasing trend of population aging. According to the latest data from China's seventh population census, China's total population has reached 1.41 billion, while the proportion of people aged 60 and above has reached 18.70 percent, up 5.44 percentage points from the 2010 sixth census. More significantly, the proportion of people aged 65 and above has also climbed to 13.50%, up 4.63 percentage points from 10 years ago (National Bureau of Statistics, 2021). This phenomenon of population aging has had a profound impact on the incidence and mortality rates of cancer. Secondly, the traditional culture of life and death. Widespread concealment of illness and fear of medical treatment in China (Zhao et al., 2020), making it difficult to screen for cancer in a timely manner at an early stage. Besides, as the clinical symptoms of cancer are not obvious at an early stage, cancer patients are often in the advanced stage once diagnosed. Thirdly, the unevenly distributed medical resources. Due to the unbalanced regional economic development and uneven cultural and educational levels in China, medical resources and technology in its central and western regions are much lower than those in eastern coastal regions, leading to a relatively high rate of cancer misdiagnosis and patients’ lack of trust in doctors’ treatment (Jing et al., 2020).

In 1946, the World Health Organization provided a comprehensive and in-depth definition of health as a state of well-being that encompasses the physical, mental and social dimensions. This definition goes far beyond the traditional understanding of health as the absence of disease or physical infirmity. The definition is based on the scientific results and arguments of in-depth research on health issues in various disciplines such as medicine, psychology and sociology, and therefore it is regarded as the most authoritative exposition of the concept of health so far. With the continuous development of modern medical concepts in the West, the assessment of the quality of life of the population no longer relies solely on negative indicators such as mortality rate, prevalence rate, survival rate, and others., but has gradually shifted to a multi-dimensional and comprehensive measurement and evaluation of individual health status. Quality of life is a comprehensive multidimensional health concept. It encompasses not only an individual's somatic, psychological, and social functioning, but also a variety of symptoms related to the disease itself or therapeutic measures. More importantly, quality of life is a subjective evaluation index that emphasizes an individual's feelings and perceptions of his or her own health status. Therefore, in assessing and improving the quality of life of the population, the subjective experience and needs of individuals should be fully taken into account (Aaronson et al., 1991). According to the quality of death index report released by The Economist Intelligence Unit in 2010 and 2015, which covered 80 countries and regions in the world, Chinese Mainland region ranks among the last ten (The Economist Intelligence Unit, 2015). The result that China's quality of death ranks among the lowest in the world shows that traditional medical care evaluation methods and indicators only focus on the existence of life and the improvement of local physical functions but cannot reflect the full connotation of the biological psychological social medical model.

1.1.2 The public's acceptance of hospice care is low

We could learn from the exploration of Chinese conventional culture of life and death, over 5,000 years of China’s cultural development has been greatly influenced by Confucianism, Taoism, Buddhism and folk secular culture. Under the influence of various cultures, the Chinese people hold their unique understandings of life and death. The value of life; Affected by traditional cultural values, the Chinese people hold a deeply-rooted sense of reverence for life.

On the whole, they believe that the value of life lies not in death but in life. How can we understand this? After the outbreak of the Covid-19 pandemic, Hubei province was the hardest-hit region. But people’s right to life and health was guaranteed by the Chinese government with nationwide efforts. Relief resources, manpower, funds and other required resources were sent to Hubei on time by fellow Chinese. They have always held that as long as people live, all the material resources lost can be reproduced. It proves that life is paramount in traditional Chinese cultural values. The value of death; Confucius, founder of Confucianism – the core of traditional Chinese culture, once said to his student Ji Lu: "Why should one bother to figure out death when he has not yet understood life?" His implication is that one should not think too much about death-related matters when one is still alive. It is thus clear that Confucius, the sage of Confucianism, also evades the issue of life and death. People today are reluctant to talk or think about death, and are even more afraid of death under the influence of traditional values and customs. A lack of time to think about death and the taboo to talk about death together makes it difficult for many people to face death calmly (Wei & You, 2012).

In short, a person has his value only when he is alive, and loses his own value once he passes away. "Dying soon" might be too sudden, too frightening and ill-considered, which might take away the patient's hope rather than help them face death positively. For the reason, death is more like a fear for the patients themselves, and for their children, it is whether they are filial. In China, death is not only an individual's right. It has become the responsibility of the whole family. Based on this, people pay attention to the reputation of the family or the whole family rather than the quality of life of the dying patients in the whole process of death. When the treatment and rescue of the dying patients have little significance, in order to show filial piety, their children still choose to actively rescue them and disregard the opposition of the elderly (P. Zhang, 2016). Under the influence of this filial piety thought, it is often difficult to implement non curative (supportive) medical measures for patients. Excessive medical treatment not only wastes a lot of medical resources and funds, but also causes patients to suffer great pain and the quality of life and dignity are difficult to maintain (Z. G. Zhu et al., 2015).

Therefore, in the culture of taboo to talk about death, the development of palliative care service is confronted with many complicated factors. When the value of life lies in life rather than death, the quality of life at the end of life can hardly be guaranteed.

1.1.3 Status of development of hospice service in public hospitals

As the national economy flourishes, the overall living standards of residents in mainland China have been comprehensively elevated to a moderately prosperous level. The public's sense of happiness, social identity, and sense of fulfillment are increasingly strengthening. In this process, the progress in medical and health services has been particularly notable. It is not only a key indicator for measuring the overall advancement of a country, nation, and society, but the extent of healthcare service coverage and equity are also the core criteria for evaluating the quality of development in the healthcare and sanitation sector.

After 20 years of basic healthcare system reform, China’s overall medical environment has been substantially improved, medical conditions have been greatly upgraded and the hospital operation management model has been gradually refined. In terms of the operation management mechanism of public hospitals, China has introduced the concept of Diagnosis Related Groups (DRG) that has gradually shifted the hospital management from extensive expansion to intensive operation and brought changes to hospital performance incentive mechanisms (Yang et al., 2022).

By the end of June 2020, the number of public hospitals as the main provider of healthcare services has reached 12,000, the coverage of primary healthcare institutions has reached 100%, and the equalization of public health services has been achieved (National Health Commission of the People's Republic of China, 2020). With the reform and development of the healthcare system, China’s hospital operation management is faced with new situations and therefore its transformation is inevitable.

In recent years, the Chinese government and the public have generally realized that the important embodiment of respect for life is to ensure that human beings live and die naturally and with dignity. Existing survey research has found that, based on the clinical practice of oncologists, hospice service, as a form of alleviative and supportive medical care for end-stage patients, has shown significant effectiveness in relieving the physical, psychosocial, and spiritual distress of patients with advanced cancer. It not only meets the diverse and multi-tiered health service needs of patients but also substantially improves the quality of life for patients and their families. Furthermore, hospice service effectively optimizes the allocation of medical resources, reduces medical expenses, and enhances the overall efficiency of healthcare services (Ventafridda, 2006). Given the increasing demand for hospice service among cancer patients in our country, actively and extensively promoting hospice service for patients with advanced cancer is not only in the immediate interest of patients and their families but also holds profound social significance and practical value (Li et al., 2019).

As mentioned above, the number of cancer patients in China is increasing year by year and the mortality rate remains high, which means that the demand for hospice care services is increasing. In 2017, the Chinese government issued relevant policies to further promote the development of hospice care in order to implement the policy of Several Opinions of the State Council on Promoting the Development of the Health Service Industry and meet the health needs of the people. After the implementation of Basic Standards for hospice care (Trial), Management Guidelines for hospice care Centers (Trial) and hospice care Practice Guidelines (Trial) (National Health Commission of the People's Republic of China, 2017), positive results have been achieved, but a number of practical challenges still exist. At the end of 2020, China's National Health Commission released data indicating that the country had 510 healthcare organizations equipped with hospice departments. By August 2023, the number of national hospice pilot hospitals had expanded to cover 185 cities (districts). Moreover, over 4,200 medical institutions now include hospice departments (National Health Commission of The People's Republic of China, 2023). As hospice-related work progresses in China, the government is exploring region-specific hospice models.

While the concept of hospice service has achieved significant social value and impact in Europe, the United States, Taiwan (Shen et al., 2017), Hong Kong, and other regions of China, mainland China faces challenges in implementing and promoting this service Existing research concurs that the quality of hospice care in China remains low, encountering issues such as the absence of a systematic management mechanism, difficulties in balancing costs with input-output ratios, human resource deficiencies, low resource utilization, institutional safeguard gaps, cultural concept clashes, and financial constraints, amongst other pragmatic obstacles (Gong et al., 2018; Jing et al., 2016).

Public hospitals can essentially be seen as a collection of multilateral contracts, encompassing a range of individuals and groups with diverse and potentially conflicting objectives. These elements together form a complex network of contracts (Liu, 2009). Within the specific consortium of hospice service provided by public hospitals, each stakeholder holds their unique pursuits and demands. These stakeholders may include patients and their families, healthcare personnel, hospital administrators, policy makers, and others, who each seek different value realizations and satisfaction of interests in hospice service. For example, patients want to improve physical function, family members want to reduce the financial burden, nursing staff pursuing professional competence, hospital administrators pursuing economic efficiency indicators, and others. These demands are the premise for their participation in the hospice care service, that is., the basis for constructing the contract for hospice care services. Developing hospice care have multi stakeholder relationships to be handled so that it can integrate into the existing medical service system and social welfare system. Based on the local healthcare management system, this study focuses on exploring how stakeholder service demands affect hospice service quality, exploring a hospice service management model for advanced cancer patients in public hospitals that is consistent with the healthcare system in mainland China, and realizing the value goal of improving hospice service quality in public hospitals.

1.2 Research contents

1.2.1 Research dilemma and hypothesis

1.2.1.1 Research dilemma

As an imported product, the development of hospice service is based on macro policy and regulation support and social and cultural adaptation, service management mechanism and mode at the meso-level, and optimization of service content at the micro level. How to effectively respond to the complex service demands of patients with advanced tumors, how to reflect the value of services and safeguard their own rights and interests on the supply side of services, and how to improve and enhance the management mechanism of hospice service by hospital administrators are a series of issues that are in demand to improve the quality of life of terminally ill patients in public hospitals, and more importantly, are needed to break through the dilemmas of the localized development of hospice service.

Initial research on the pilot hospitals found that the scope of the pilot hospice care for patients with advanced oncology was further expanded, but the overall quality of the service was at a low level, and there was a general dilemma of difficulty in normalizing and systematizing operations and management (Huang et al., 2022).

This is demonstrated by:

First, there is a lack of scientific operation and management mechanism. hospice care services involve the patients' physical care, psychological intervention, social support, spiritual care, and other multi-dimensional comprehensive care needs, emphasizing the cooperation fit of team members (Amano et al., 2015). Brereton et al. (2017) pointed out that multidisciplinary cooperation is a safe and effective management mode of hospice care services. The multidisciplinary collaboration model in hospice service is a method of working together that involves professionals from various disciplines, aiming to provide comprehensive, systematic, and high-quality hospice service for patients with advanced cancer and their families. However, as seen in the current management practices of pilot hospice service hospitals, the potential advantages of this multidisciplinary collaboration model have not been fully demonstrated and utilized. In other words, although the model has many theoretical advantages, its benefits have not been fully realized in practice. This suggests that in our future work, we need to further optimize and improve the relevant management mechanisms to ensure that the multidisciplinary collaboration model can maximize its utility in hospice service. Team members from different disciplines have different interest demands on carrying out hospice care services and their interest demands are ignored, which leads to the problems in the operation and management process of multidisciplinary cooperation team in hospice care such as high personnel turnover rate and difficulties in linking social resources (Zhao et al., 2020).

Second, hospice care services are facing the problem of embeddedness in the operation and management of public hospitals. The hospice care pilot hospital still adopts the medical service system and management mechanism oriented to curing diseases. Therefore, in the process of developing hospice care services, public hospitals are faced with many problems related to the rational allocation of medical resources, such as human resources, material resources and funds. For example, according to the current performance evaluation indicator of public hospitals, inpatient income is an important indicator in the revenue and expenditure structure of public hospitals. If palliative beds are set, the inpatient income of the department will be reduced, thus affecting the economic income of medical staff and the economic benefits of the hospital and causing a degree of conflict of economic interests (Lin & Liu, 2022).

Third, there is a lack of value recognition of the hospice service concept. First of all, influenced by the traditional Chinese death culture, Chinese people generally believe that the significance of receiving medical services is to effect a cure and the existence of the hospital is to cure people's clinical symptoms (Yu et al., 2018). Secondly, with the continuous innovation and progress of modern medical technology, as well as the profound social value and impact brought about by these technologies, there has been a clear tendency in the medical field towards a "technicism" dominated development (Ren, 2019). This trend has led to a gradual separation of the spirit of medical science and the spirit of medical humanities in practical applications, resulting in an increasingly significant value orientation towards medical utilitarianism. In other words, while modern medicine pursues technological innovation, it sometimes neglects the humanistic care and ethical values of medicine. This utilitarian bias is something that warrants our deep reflection and adjustment (Liu & Li, 2015). In the evaluation of medical service effect, the main basis for objective evaluation is the improvement or cure of clinical symptoms. But the evaluation of hospice care services tends to be subjective and is difficult to produce significant and intuitive service value. Moreover, because of the insignificant economic benefits of hospice care services, it is difficult to meet the interest demands of the economic benefit maximization of public hospitals (He et al., 2016). That is specifically reflected in the fact that hospice care services have no clear charge item, no support of medical insurance policies and its economic benefits are difficult to estimate.

Fourth, the policies and regulations are not perfect. In terms of legal support, hospice care involves more complicated medical ethics issues. With the concept of Chinese traditional filial piety culture, the degree of recognition of the rationality of the hospice care service scheme is limited by the individual cognition of the patients and their families and there are many uncertainties. At present, due to the lack of legal support, if the hospital decides to remove the life sustain medical treatment based on professional assessment, and the patients and their families have different opinions on whether the life sustain medical treatment should be taken, it will lead to doctor-patient conflicts and even legal disputes (Jia, 2021). Therefore, in order to avoid conflicts between doctors and patients, medical staff in public hospitals tend to take the wishes of family members as the basis of decision for medical plans in the process of planning the treatment (Jiang et al., 2007), rather than the patients' wishes or corresponding suggestions based on professional evaluation (S. T. Zhang et al., 2016). In terms of policy support, though the Chinese government has issued a guidance document on hospice care services, there has no clear guidance on specific contents. Whether the hospice care practice carried out in the regions conforms to the norms, can truly relieve the pain of patients and improve the quality of life needs further consideration. From the perspective of overall development, there is still a lack of localized scientific and operable quality evaluation system.

1.2.1.2 Research hypotheses

At this stage, individuals or groups related to hospice service in the pilot hospitals, also known as stakeholders, are mainly part-time medical staff, encompassing different roles such as medical social workers, dietitians, and counsellors, as well as third-party groups such as volunteers and public interest organizations that provide unpaid support.

Most of the problems in the management of public hospitals stem from conflict of interest and imbalance of status between stakeholders. The quality of hospice service depends on the supportive services provided by the participants, so responding effectively to the interests of the participants is the key to improving the quality of hospice service. By analyzing the interests of all parties, an appropriate interest coordination mechanism can be established to ensure the effective realization of the interests of all stakeholders in public hospitals and to reduce the unnecessary loss of efficiency caused by conflicts of interest. The task of coordinating these interests cannot be accomplished by a single stakeholder such as the government, market, or society alone. It requires an effective integration of the strengths and capabilities of all parties within a comprehensive and systematic theoretical framework. A governance system that involves the joint participation of all stakeholders needs to be constructed to achieve the comprehensive integration and efficient coordination of interests. In this process, each stakeholder should leverage their own advantages, work together, and jointly promote the realization of the goals of interest coordination (Yao & Jiang, 2016).

In this regard, this study argues that to address the localization dilemma of hospice development, it is necessary to answer the questions of " How do the demands of hospice stakeholders influence hospice services and management in public hospitals?"

Hypothesis 1: If stakeholders' needs are met, then their willingness to participate in hospice service and management will increase.

Hypothesis 2: There is a conflict of interest between the interest claims of each stakeholder.

Hypothesis 3: The existence of conflict of interest among stakeholders has an impact on the quality of hospice service.

1.2.2 Research objective

Medical services, as an important component of social public services, inherently possess the character of public welfare, which cannot be overlooked. When fulfilling public management functions, the government should regard the construction of an equitable and shared medical service system as a core task, in order to meet the widespread public expectation for reduced medical costs and an increase in affordable, high-quality medical services. Nevertheless, from the perspective of hospitals, due to their nature as economic entities, they often tend to maximize economic benefits during their operations. This, to some extent, creates a tension with the goals of actively assuming social responsibilities and enhancing overall social welfare (Yu & Liu, 2020). From the perspective of management, hospice care services involve professionals with different disciplinary backgrounds and social backgrounds. In the process of service, there are interest games among various stakeholders.

Faced with the development dilemma of hospice care such as nonstandard service management, ethical cultural conflict and high staff turnover rate, researchers generally believe that only by defining the responsibility subject, standardizing the service content, ensuring the source of funds, building a professional team and practicing the operation mode, can the hospice care service system be gradually formed.

According to the hospice care service concept and the stakeholder theory framework, this study further explores and integrates the interest demands of different stakeholders involved in hospice care service of public hospitals, assesses the relationship between stakeholders and optimize the relevance and influence between interest demands from core interest demand of all parties. Based on this, the demand index of each stakeholder can be established and the index system of hospice care service for advanced cancer patients in public hospitals can be built. The study tries to explore the management mode of hospice care service for advanced cancer patients in public hospitals in line with the medical system in mainland China.

1.2.3 Theoretical framework

Stakeholder theory emphasizes that an organization is a complex system composed of multiple elements provided by various stakeholders. From this perspective, the managers of an organization are tasked with the important responsibility of coordinating and maintaining long-term stable relationships with stakeholders, with the aim of jointly advancing the organization's goals through the widespread participation and contribution of all relevant parties (Freeman, 1984). Compared to traditional governance models, the stakeholder governance model highlights the social responsibilities of the organization, as well as the broad social impact of organizational behavior. A core assumption of this theory is that every stakeholder, regardless of their actual power or legal status, has unique value in the development process of the organization. Given that organizations may impact individual interests in at least two dimensions ("potential harm" and "the influence of autonomy"), any decision or action of the organization is inevitably related to the interests of the stakeholders. This fact lays a solid ethical foundation for stakeholder theory (Hu et al., 2007).

The application of stakeholder theories and methods in health is based on disciplines such as ethics, public policy and the social sciences. As one of the important management tools in the field of public health management, the stakeholder theory analysis framework not only provides a complete interest analysis framework, but also realizes the feedback and integration of the interest demands of interest groups in medical services. On this basis, Dr. Huang (2011) further explored and confirmed that based on stakeholder orientation, public hospitals are similar to enterprises, mainly through the allocation and integration of different resources, and form a profitable organization through explicit or implicit contracts.

On the one hand, stakeholder theory can effectively integrate feedback from various interest groups in the healthcare process. On the other hand, palliative care services constitute a comprehensive care system jointly formed by multiple stakeholders, including doctors, nurses, social support systems, caregivers, and patients. Foreign researchers are gradually realizing the necessity of involving stakeholders in palliative care research. Its practice has proven that the theory has significant practical value in improving the quality of nursing services, enhancing patient satisfaction, promoting effective communication between medical staff and patients, and encouraging patient self-management of health (Zhang & Zhang, 2023). Despite this, domestic research in this field is relatively scarce. Meanwhile, palliative care nursing management in China involves many organizations and individuals, and their respective roles and actual needs differ significantly. Therefore, from the perspective of stakeholders, this study believes that it is crucial to deeply analyze the viewpoints of different stakeholders. In this regard, this study adopts the stakeholder application framework proposed by Blair, which mainly consists of two major steps: Firstly, identifying and categorizing the stakeholders within the organization. In this process, researchers first preliminarily identify obvious groups with vested interests and then further screen out groups or individuals who have a key impact on the organization's development through interviews or questionnaires. Additionally, these stakeholders are quantitatively assessed using the Mitchell scoring method. Secondly, constructing a stakeholder diagram, which conveys different information depending on the purpose of its use. It mainly reveals the intrinsic motivations and needs of stakeholders participating in the service. For example, when used for analyzing the organizational environment, the diagram can clearly depict the network of relationships among key stakeholders and indicate the closeness of their connections.

1.3 Research ideas

This study employs a mixed-methods research design that combines quantitative and qualitative approaches.

In the first phase, qualitative research methods are used. The study selects research subjects through purposeful sampling. To delve into the needs of stakeholders in hospice service, semi-structured interviews are conducted to collect in-depth information related to the research topic. The Colaizzi seven-step analysis method is used to analyze the content of stakeholder demands in public hospital hospice service, extracting various demand indicators for the management of hospice service for advanced cancer patients in public hospitals from the stakeholders' interest demands.

In the second phase, quantitative research methods are applied. By reviewing relevant domestic and international research findings, the National Consensus Project for Quality Hospice service guidelines in the United States, and the "Hospice service Practice Guidelines" issued by China's National Health Commission, the preliminary indicator system is refined. Taking advantage of the simplicity and operability of scales, the indicator system's maneuverability and accuracy are optimized. The Delphi method and the Analytic Hierarchy Process (AHP) are used to determine the weight of each indicator, ultimately formed a public hospital hospice service quality evaluation index system. Taking Wenzhou Medical University Affiliated Hospital as an example, the fuzzy comprehensive evaluation method is used to comprehensively evaluate the quality of the hospice service provided, and based on this analysis, the service content and management mechanisms are optimized.

Chapter 2: Literature Review

2.1 Application value of the theory of stakeholder

2.1.1 Applicability of stakeholder theory

During the growth of a company, individuals or groups that significantly influence its daily operations and production activities are commonly referred to as stakeholders. In fact, without the support of these stakeholders, it is difficult for a company to sustain its survival and development. This concept is not only applicable to the business field but also widely applied to various aspects of social life, becoming a common point of research in many disciplines. According to the theory of stakeholders, a company is seen as a collective composed of different resource providers, and its managers need to coordinate to ensure and maintain long-term stable relationships with all stakeholders (Freeman, 1984). Such relationships help to attract all personnel related to the company to participate in various activities of the company, and work together to promote the success of the company. Therefore, clarifying the role positioning of each stakeholder in the development of the company and formulating corresponding strategies and tactics based on this judgment is the core of the stakeholder orientation, and it is also the key to the research of the theory of stakeholders.

On the basis of in-depth analysis of the independence and interdependence of various stakeholders, enterprise managers accurately identify the core stakeholders that management should give priority to, and flexibly seek to maximize the benefits of the enterprise and dynamically adjust the strategy to ensure that the enterprise achieves efficient management (Qi & Shen, 2014). Currently, the stakeholder management process mainly includes the following steps: first, identify the main stakeholders involved in a specific event; second, accurately determine the role and impact of each stakeholder in the development of the event process, so as to clearly define the key or core stakeholders; again, combined with the actual resources and conditions of the enterprise, meticulously analyze the interests of the various parties and points of interest; and finally, based on the demands of each stakeholder, a targeted and personalized decision-making plan is formulated, aiming to achieve a comprehensive balance of the overall interests, and thus promote the improvement of the organization's service quality and sustainable development (Jin & Shang, 2020).The existing stakeholder management procedures mainly include : Identify key stakeholders of some specific events; Identify the role of various stakeholders in the occurrence and development of the event to clearly define the key or core stakeholders; Analyze the interests and concerns of all parties in combination with the actual resources or conditions; Formulate personalized decision-making plans matching the demands of all stakeholders to achieve the expected goal of comprehensive balance of overall interests and promote the optimization of organizational service quality and sustainable development (Jin & Shang, 2020). Stakeholders can be individuals, groups, or organizations that are affected or influenced by specific actions of others in various fields (Bjugn & Casati, 2012).

Due to the development and prevalence of the stakeholder theory, the theory has been rapidly developed in various fields of social sciences. In 1988, Blair and Whitehead from the United States were the first to systematically apply stakeholder theory and methods to the field of health. Since then, this theory has been widely promoted and applied in various aspects such as health institution management and health policy analysis. Today, stakeholder theory has become one of the indispensable important tools in the field of health management. It not only provides a comprehensive and systematic framework for the analysis of relevant interest groups, but also effectively achieves the integration and utilization of feedback information from various interest groups in the medical care process.

The advantages of the extensive application of the stakeholder theory in public hospitals can be summarized as follows. First, stakeholder is the core subject of each link in the medical system, and is the direct executor and receiver of various behaviors, processes, and results. Stakeholders act as a key party in the hospital reform, policy implementation, and resource allocation. Stakeholder theory thus is significant in practice. Second, the stakeholder theory develops a new and careful perspective in terms of medical issues. With this theory, controversial problems can be analyzed and the pros and cons can also be studied in detail, supplemented with opinions from other perspectives. Stakeholder theory is advanced in practice. Third, the stakeholder theory is still in the process of continuous expansion and extension, and its conceptual flexibility and framework plasticity provide a high degree of compatibility for complex medical issues. The stakeholder theory has practical inclusiveness.

Currently, Chinese scholars share similar classifications of stakeholders in public hospitals. Generally, they divide stakeholders into three types, namely, the government, medical institutions, and patients. A more detailed classification usually further classifies medical institutions into different types such as core hospitals, non-member hospitals and other member hospitals, or non-designated medical institutions and designated medical institutions, or community health service centers and general hospitals. The specific division method is related to the research perspectives, research objects and theoretical basis and others. There is no standard classification for the time being. However, the "Multidimensional Segmentation Method" and "Mitchell Scoring Method", which are based on the Western method, have been most frequently used in research because of their advantages of being easy to analyze and widely applicable.

The stakeholder theory is a powerful tool to analyze the problems in a system that is in operation and an effective way to propose improvements. It is also widely used in public hospitals. Stakeholders are an essential part in terms of allocation of important medical resources, medical payment system reforms, and health reforms. They also play an important role in the operation and management of hospitals and disease diagnosis and treatment. All of these require the balance of interests and handling of interest conflict among stakeholders. Stakeholder theory has been adopted in many studies on medical problems with Chinese characteristics. For example, analyzed the causes for demands of a group based on the perspective of rural doctors as stakeholders, and proposed strategies to solve the demands of rural doctors as a group (Tang et al., 2013); Analyzed and evaluated the stakeholders of the new rural cooperative medical insurance system, defined the main stakeholders and analyzes the interests of all stakeholders (Guo et al., 2014); Carried out an empirical study on the interest demands of stakeholders of the two-way referral system (Lei et al., 2015).

The stakeholder theory is adopted in the analysis on the reform of the medical payment system. Currently, China adopts a fee-for-service management and consumption model for medical resources, which has shortcomings such as opaque distribution supervision and unfair deduction and payment, resulting in possible worse doctor-patient relationships. For this reason, Zhang et al. (2015) pointed out that there are significant advantages in promoting case-mix funding model in China and conducted in-depth analysis and discussion of the pros and cons for the stakeholders of public hospitals based on the stakeholder theory, which laid a theoretical foundation for further studies.

The stakeholder theory has also been applied to studies on the distribution of management ethics and social responsibilities of different roles in the public hospitals. The studies divide stakeholders into four categories. Specifically, the government is the funder, who should maximize its own interests; the patient is the direct beneficiary of the hospital, who should receive satisfactory medical care; the president of the hospital is the fund manager entrusted by the government, who should try to improve the hospital’s operating performances; the doctor is the direct operator of the hospital, who should participate in the major affairs of the hospital development whose social status and economic income should be guaranteed (Li & Ren, 2012).

If the above-mentioned four types of stakeholders play their part under the respective responsibility frameworks, the operational efficiency of public hospitals will be significantly improved and the distribution of social responsibilities will be optimized.

2.1.2 The value of stakeholder theory in public hospital management

In China, the essence of health reform is a process of continuously optimizing the balance between medical resources and the distribution of benefits, as well as a process of constructing and improving the health system through coordination, adjustment of interests and sharing of responsibilities among stakeholders. Public hospital reform, as a core component of health reform, focuses on balancing the demands of all stakeholders, promoting supply-side reform through the market mechanism, optimizing the allocation of healthcare resources, improving the efficiency of healthcare resource utilization, and striving to make high-quality healthcare services more affordable. Such a reform inevitably involves many complex interests; therefore, the stakeholder theory provides a valuable analytical perspective for the reform of public hospitals. Drawing on the analytical frameworks of "multidimensional segmentation" and "Mitchell's scoring method" of western scholars, Chen et al. (2004) categorizes these stakeholders into core stakeholders, potential stakeholders, and anticipated stakeholders based on three dimensions: their proactivity, significance, and the urgency of their interest demands. This categorization helps to identify and understand the roles and influences of each stakeholder in public hospital reform, and provides useful reference for the smooth progress of the reform.

The stakeholder theory also plays an important role in the management of public hospitals. Most of the problems in public hospital management stem from the interest conflict between stakeholders and the imbalance of their status. By analyzing the interests of all parties, a proper interest coordination mechanism can be established to ensure the effective realization of the interests of all stakeholders in public hospitals and reduce unnecessary efficiency losses caused by conflicts of interest. This kind of interest coordination cannot be achieved by only one type of stakeholders such as the government, market or society alone. It is necessary to integrate the power of all parties who can complement each other within a theoretical framework and thus establish a joint governance system for stakeholders and realize the integration and coordination of interests (Yao & Jiang, 2016).

The guidelines for its implementation cover the following aspects: First, in-depth understanding of and high regard for the interests of deterministic stakeholders: we must pay close attention to the policy dynamics of health administration organizations and actively promote the cooperation and support of various stakeholders for the relevant activities of these organizations, so as to ensure the smooth operation of the health system. The second is to properly handle the demands of anticipated stakeholders in accordance with the law: We should strengthen communication and cooperation with supply units, the general public, and other anticipated stakeholders, continuously improve the social promotion mechanisms of public hospitals, and thereby enhance the hospital's soft power and overall image. Third, we should precisely respond to the reasonable concerns of potential stakeholders: by strengthening communication with primary care units and promoting health education and publicity, we can turn these potential supportive forces into a solid backing for the future development of the hospital. Fourth, focus on upgrading the quality of management personnel at all levels and strengthening skills training: in management, special attention should be paid to the training and development of new employees, those with limited literacy, and healthcare workers. By helping them to correctly understand the concept of public hospital stakeholders, we can lay a solid foundation for the improvement of the hospital's future management mechanism and the optimization of the development environment (Liu, 2018).

Apparently, the stakeholder theory can help with the improvement of clinical services in public hospitals. It is usually difficult to effectively assess the performance of services of public clinics due to the lack of quality measurement standards and other complex factors. Hence, it is difficult to come up with a conceptual framework for the future decision-making for health service managers, clinicians and administrative staff. Through scientific analysis, a research team in Queensland, Australia, selected five fundamental influencing factors of culture, stakeholders, resources, demand, and institutional reform from many influencing factors, to build a framework for continuous improvement of outpatient services, with stakeholders as a key part (Naiker et al., 2019). Patients with advanced chronic diseases are currently the main clinical patient group. Treatment of chronic diseases is comprehensive and complex, and often requires joint treatment of multiple departments, involving a large number of stakeholders and resulting in intricate interest relationships. To improve the quality of clinical services for this group of patients is vital. A study based on chronic obstructive pulmonary disease made recommendations from the perspective of stakeholders, that is, under the framework of public hospital outpatient clinics, the cooperation between doctors and local-funded public chronic disease management programs should be strengthened, in order to overcome obstacles of the medical intervention by multidisciplinary teams, and to ensure feasibility and acceptability and improve the health outcomes of patients with chronic obstructive pulmonary disease (Belinda et al., 2016).

The stakeholder theory is essential for public hospitals to realize public welfare. Take the main stakeholder in public hospitals, doctors, as an example. They play multiple roles in the health system, usually acting as agents for various parties, including patients, insurance companies, medical institutions, and the hospital facilities where they practice. As China's economic reform is increasingly market-oriented, doctors are becoming more driven by interests, and have more financial connection with the hospitals. Such phenomenon has caused an imbalance between the two major roles of doctors—the agent of the hospital and the agent of the patient. As a result, the principle of realizing public welfare is weakened. Lubbe et al. (2019) believe that as the other two major stakeholders of public hospitals, namely, the government and the hospital administrative department, they should play a more substantial role to compensate the doctor's role as an agent for hospitals, and guarantee that doctors can serve stably as the agent for patients.

Some novel or radical decision-making in public hospitals also needs the support of stakeholders and their suggestions on improvement. There are many examples such as the tissue genetic testing of patients with colorectal cancer and endometrial cancer (O'Shea et al., 2021), the integration of complementary and alternative medicine into the standard anti-cancer treatment of cancer patients (River et al., 2018), and the hospice care for patients with dementia (Yoong et al., 2017). Since these plans and measures cannot be simulated in advance on animal models and cell lines like natural science experiments, a multi-dimensional theoretical feasibility analysis, especially the stakeholder theory's analysis of obstacles and conflicts is a more reasonable method for verification, and to avoid the abortion of decisions. In the questionnaire survey of intern doctors in six public hospitals in Malaysia, doctors who are in charge of the intern doctors are the most influential stakeholders. The survey found that they can only promote the development of talents among the interns in public hospitals by adopting the correct supervision and teaching methods and thus offer a framework and support to improve the learning outcomes of interns (Subramaniam et al., 2015).

The stakeholder theory is often used in conjunction with the game theory, because the stakeholder theory provides researchers with a perspective to observe problems, distinguishes stakeholders at different levels involved in the problems, and identifies their appeals and connections. Merely based on the stakeholder theory, researchers cannot make a scientific analysis of the relationship between the interests of various stakeholders but can only make a rough judgment. However, the game theory can clarify the potential game of interests and the role relationship among stakeholders, and give a more detailed analysis. For instance, in the promotion of the hierarchical diagnosis and treatment system in public hospitals, the researchers first identified four types of core stakeholders based on the stakeholder theory, namely community health service centers (referred to as community centers), government medical management departments (referred to as governments), and general hospitals (referred to as hospitals), patients, and then analyzed the game relationship among stakeholders before, during and after the patients receive treatment, and revealed in-depth problems in the implementation of the hierarchical diagnosis and treatment system. At last, the researchers clarified the problems with each group and provide helpful suggestions (Li, 2018).

2.1.3 Summary

As an essential part of the public hospital system, stakeholders can offer valuable advice and experience. Therefore, public hospitals in many countries invite stakeholders to provide improvement plans for them (Top & Sungur, 2019). In summary, the application of the stakeholder theory in the studies of public hospitals has gradually popularized. This Western-derived concept is not only widely used abroad, but also provides a novel and constructive analysis perspective for resolving some medical problems with Chinese characteristics in China. As a basic framework, this theoretical system can well cover various issues such as hospital management, talent training, pharmaceutical management, clinical services, hospice care, and public health challenges. At the same time, it can be studied jointly with game theory, questionnaire surveys and ethical analysis. These theoretical tools promote and optimize each other to provide theoretical basis for the research of public hospitals. It is fair to believe that the stakeholder theory will achieve greater development in the application in public hospitals in the future.

2.2 The development of hospice care

2.2.1 The origins of hospice care

The concept of hospice care has a long history dating back to ancient Greek and Roman times, and is derived from the Latin word "hospitium," which originally referred to places that provided shelter and sustenance for pilgrims and travelers. These establishments were typically located near monasteries (Brooksbank, 2009). As time progressed, the concept evolved and gave rise to "end of life care", "terminal care", " palliative care " and "hospice service". Although there are subtle literal differences between these terms, the first three are more focused on describing the stage of disease progression and the patient's state of being, "hospice service" emphasizes the content of the services provided. In the context of this study, we chose to use hospice care as the core terminology. The core philosophy of hospice care is not to hasten or delay death, but rather to view death as a natural process and to honor the value of life in the process. This includes such diverse elements as reducing the stress and suffering caused by the symptoms of the disease and the side effects of its treatment, identifying and meeting the patient's practical and spiritual needs, enhancing understanding of the disease and its progression, assisting in coping with the feelings and changes associated with the disease, and coordinating care services and accessing additional resources (National Health Commission of the People's Republic of China, 2017).

The United Kingdom's development history in the field of hospice care can be regarded as pioneering. Back in 1967, Cicely Saunders founded a hospice in London called St. Christopher's Hospice. The hospital is not only the first legally registered hospice charity in the world, but it is also run by an independent foundation. It is dedicated to providing a full range of free services to patients and their families on a physical, mental, social and spiritual level. Over time, St. Christopher's Hospice has evolved into a modern hospice center that combines medical practice, education and training, and scientific research. The birth of this organization marked the beginning of a new era in modern hospice care. As the founder of St. Christopher's Hospice, Cicely Saunders pioneered the integration of nursing, medicine and sociology in the provision of medical care for terminally ill patients, effectively managing the physical and psychological suffering of patients with advanced cancer (Lutz, 2011).

Influenced by the hospice movement launched by Cicely Saunders, many countries and regions such as the United States, France, Canada, Hong Kong and Taiwan have developed hospice service, and some countries and regions now have a complete hospice system. The development of hospice care in mainland China can generally be summarized as follows: practice first, policy follow-up and regional pilot projects. The first hospices in mainland China began to emerge after the opening of the Songtang Care Hospital in Beijing in 1987. For more than 40 years now, hospices in mainland China have been developed, with individual hospitals, departments and doctors exploring the establishment of end-of-life care wards out of their own sentiments or wishes (Ning, 2019), such as the opening of the "care unit" at the Third People's Hospital in Kunming in 1996 and the study of end-of-life care at Peking Union Medical College Hospital in 2012. The development of end-of-life care in mainland China is inevitably based on public hospitals, where almost all medical technology and resources are concentrated.

2.2.2 Current status of hospice development

2.2.2.1 Policy support and legal protection

In 1990, the National Health Service and Community Care Act was enacted, adding hospice care to the UK's health insurance scheme. In the US, the Social Security Act (SSA) was amended in 1982 to create the Medicare Health Benefit (MHB) and incorporated the Tax Equity and Fiscal Responsibility Ac (TEFRA), with the government taking the lead in establishing hospice payments and the resulting hospice care costs are covered by the public health insurance system. In 1985, TEFRA was mandated as a permanent benefit. On the other hand, the regulation of hospices has been institutionalized. In the UK, the National Department of Health has developed guidelines for hospices that require them to focus on the "quality of death" of their citizens. In addition, the UK's charitable trust regulatory system features a comprehensive system of charitable trust regulatory bodies, clear fiduciary duties for charitable trustees, and a standardized scope of charitable trust regulation. The clear boundary between the audit and supervision subjects of charitable organizations effectively avoids duplication of regulation and waste of resources, improves regulatory efficiency and reduces regulatory costs (Huang & Gu, 2021).

In 2006, the former Chinese Medicine Administration of the Ministry of Health issued the "Measures for the Administration of Urban Community Health Service Institutions (for Trial Implementation)", which stipulates that medical institutions that are in a position to do so can register to set up hospice units, but lacks specific provisions on the elements of access to hospice units, the connotations of the services and the ways to achieve them. In the same year, the UK government introduced the Charities Act, which clearly sets out the qualification criteria for hospice-related charities and requires organizations that must meet the basic conditions to apply for registration. In 2016, the State Council issued the "In 2017, the National Health Planning Commission issued the Basic Standards for Hospice Care (Trial) and the Hospice Care Standards (Trial), Management Standards for Hospice Centre (Trial) and Hospice Practice Guidelines (Trial), which have since begun to be built at the national level. Since then, hospice care in China has entered a period of rapid development.

Although the Chinese government is aware of the seriousness of the issue of quality of life at the end of life, due to various factors such as the large population base and public opinion, relevant policies are mainly based on macro-advocacy, and are characterized by fragmentation, weak operability and vague concepts of provisions. Hospice care has always been seen as the responsibility of the health care system rather than a social need or a social issue, both by the central government and by local governments at provincial and municipal levels. The policies that have been introduced tend to treat hospice care as a complementary medical service, and the policies are mostly encouraging but not very practical, while there is a lack of support in terms of laws and regulations, medical insurance and financial support, education and human capital investment that are needed for the development of hospice care. In terms of legislation, mainland China still has a long way to go before hospice care is truly legalized. There is still a lot of resistance to the enactment of legislation: 1) legislation on hospice care may be contrary to the constitutional right to life, and may lead to contradictions in the enforcement of the law; 2) the widespread implementation of hospice care may lead to confusion in the medical market, exacerbating the strained doctor-patient relationship and increasing medical disputes, as the traditional concept of life and death has not yet been changed; 3) we still lack regulations on the validity of living wills, and are unable to define whether a patient's illness is suitable for hospice care, or whether he or she is willing to receive hospice care, and whether hospice care is in place during the period until his or her death, which also makes it difficult to align hospice care with other laws such as criminal law and civil law; 4.The legislation of hospice care is destined to overcome many obstacles and cost a lot of money and manpower, and is difficult to complete in a short time.

In summary, mainland China has not yet established a specific or relevant policy and regulatory system for the management of hospice organizations. There is a lack of unified health and medical norms for the provision of hospice service in general hospitals, both at the national macro level and at the provincial (municipal) meso-level. Although some of the policy documents show the concern and importance of hospice care, most of these documents are characterized by fragmentation and non-specificity. Especially in core issues such as the legal status definition, funding security, industry supervision mechanisms, and the establishment of industry standards and norms that hospice care institutions urgently need to address, clear and specific policy guidance and support have not yet been formed.

2.2.2.2 The concept of life and death and traditional ethics

Looking back over the long history of humanity, the question of life and death has been a constant topic in the history of philosophy, with different philosophers' perspectives exploring different claims and outcomes. The rise of the global hospice movement has led to a new understanding of the concepts of quality of life at the end of life and death with dignity, and is profoundly influencing the practice of hospice care in China. It is also causing a certain collision between mainstream culture and traditional philosophies of life, and how to make the two coexist harmoniously so that the general public can accept a scientific philosophy of life is one of the important issues being explored.

Researchers generally agree that the differences between Chinese and Western ethical cultures have had an impact on the practical implementation of hospice care in different regions, mainly in the concept of death. Dying is a stage in the natural course of life that every human being must reach. The ethical relationship in Western countries is based on religion and humanism, with liberal thought emphasizing and respecting the individual's thoughts and ideas, and end-of-life care is a formal option for passing through the final stages of life. The philosophers Augustine and Thomas Aquinas, who emerged from a religious context, both believed that death was not the end of man, but a necessary process towards heaven, and so much of Western philosophy of life emphasized death as a better eternal state. The hospice care movement has been gradually emerging since the 1960s, among which the contributions of Dame Cicely Saunders are particularly outstanding. Ms. Sanders not only developed an innovative approach to non-curative symptom management for the terminally ill, but also explicitly advocated the concept of "living with the dying". This philosophy emphasizes respecting and fulfilling the unique quest for dignity of each terminally ill person. In addition, this social movement provides a strong social impetus for the development of hospice care through actions that echo a gentler social context.

Cultural beliefs are key to judging the quality of life at the end of life, and Confucianism, as propounded by Confucius, is the core value system of the Chinese people's ideology. In the Confucian ideology and ethical culture that China has always followed, philosophical concepts related to death are often avoided and unacceptable on a psychological and emotional level, thus creating a tendency for the social values of "rebirth", "joyful life" and "taboo death". The traditional Chinese concept of life and death overemphasizes the continuity of life and regards "immortality" as the ultimate pursuit, but neglects to explore and understand the essence of the meaning of death. Influenced by Chinese Confucianism, traditional Chinese education focuses on the cultivation of a view of life and emphasizes the value of life, resulting in a general lack of ability to cope with death and the resulting fear of talking about life and death (Tian, 2009). The current cultural diversity of society has led to a situation where each culture is different. With the current cultural pluralism in society, each ethical choice has its own justification, but it also implies the sacrifice of one party's interests. Confucianism focuses on the value of life and neglects the value of death, and there is a lack of education on death, resulting in a great fear of death. Traditional medical education, when training medical personnel, focuses mainly on the transfer of knowledge and skills in life, old age and illness, but neglects to emphasize the education on death, which is the most frequent contact of medical personnel in their daily work. If they do not do their best to save a patient's life at the last minute, they are not only criticized by others, but also feel guilty and upset. The lack of such an educational model has led to the fact that when medical workers face death, they tend to regard it as a failure of medical treatment or a deficiency in their own abilities, rather than as an objective law of the natural evolution of life (Sun, 2006). Therefore, it is necessary to strengthen the weight of death education in medical education to help medical workers establish a correct concept of death and face the end of life with a more scientific and humanistic attitude.

Duan (2006) emphasized that, in contrast to the Western philosophy of death, which focuses on the principles of subjectivity and individuality, the Confucian concept of life and death places a social value on the meaning of the death and reflects the value of the individual through social values, such as advocating the idea of sacrificing the small self to achieve the big self and daring to sacrifice oneself for justice. In China, the Confucian ethic of "benevolence, righteousness, propriety, wisdom and faith" is the core of the ethic, and it is widely believed that the collective good should take precedence over the individual, that death is not only the right of the individual but also the responsibility of the whole family, and that doing one's best to prolong life is a concrete expression of family responsibility, that is. focusing on the length rather than the quality of life (Fan, 2011). Therefore, the family's concern for the dying patient is not the patient's feelings and thoughts, but rather their own efforts to save life in the last moments and their compliance with filial requirements, which is related to the reputation of the family members and even the whole family. In essence, this concept of life and death is a concrete expression of traditional Chinese ethical thinking in the family. It is thus clear. As the family is the smallest unit in Chinese society, the social concept of the quality of dying is therefore difficult to transform. This ethical and cultural background has prevented the positive acceptance of the concept of end-of-life care by terminally ill patients and their families, even under the impact of mainstream Western culture (Xu et al., 2020).

How the concept and practice of end-of-life care can be truly meaningfully applied to the dying and their periphery necessarily requires consideration of cultural adaptation. In 1977, in an article published in the inaugural issue of the journal Death Education, Leviton defined death education as "an ongoing process of communicating appropriate death-related knowledge to the community at large and, as a result, causing a change in attitudes and behavior". In the 1980s, the concept of hospice care was significantly enhanced and expanded in public perception through the deepening of life and death research in the United Kingdom and the United States and the widespread dissemination and popularization of death education among the general public. Such research and education efforts not only deepened people's understanding of the importance of end-of-life care, but also laid a solid social and cultural foundation for the development of hospice service. In the early days of hospice care in Western countries, the topic of death was relatively unknown but not rejected by the public. From the beginning of the hospice movement, the British government and the media encouraged people to talk openly about death, and the public could learn more about hospice care through the news media such as television and newspapers. When values are not yet shared, it is easy to produce contradictory words and actions to carry out education to the masses to face death and discuss death. Because most people have a deep fear of death, they instinctively reject what they see and hear about it, in other words, they are more likely to reject hospice service, both psychologically and emotionally.

In recent years, documentaries on hospice and emergency room topics, as well as new media productions, have sparked strong resonance and reaction among the public, such as the documentary series “The World of the Living”, which deals with life and death issues. A more common form of public advocacy is now hospice literacy and education through internet platforms. This proactive form of information support is widely available on hospice-specific web pages, mobile apps, and WeChat public numbers. Canada's virtual hospice webpage, for example, provides detailed hospice service and hospice information resources for different user groups. In China, existing hospice-related websites, apps and public numbers also focus on information support. For example, some public websites focusing on the promotion of advance directives provide free systematic courses such as Professor Zhao Keshi's "The Unbearable Weight of Life - Life and Death from a Medical Perspective", as well as course resources covering advance directives and hospice service. These courses are designed for patients, caregivers, and the general public, and aim to popularize the concept and practice of hospice care. Currently, the prevalence of new media on the Internet has made the use of information support technology relatively mature and easy to access, and the audience groups and service forms of information services have become diversified. Therefore, it is highly feasible and practical to utilize this type of mass education to promote hospice care.

2.2.2.3 Talent Development and Team Building

Saunders, the founder of St. Christopher's Hospice, has written numerous articles that delve into the core concepts of hospice service based on his extensive clinical practice. These concepts included effective symptom control, pain relief, close teamwork, active volunteer participation, holistic body and soul care, universal access to death education, and the availability of grief counseling. These concepts have since evolved into the basic ethics and principles of hospice service. On the other hand, John Ellershaw, the medical director of Marie Curie Hospice, elaborated on symptom control strategies for terminally ill patients in his book, and discussed in depth the ethical issues, religious beliefs factors, and communication skills between patients and families that hospice practice faces. These contents provide valuable theoretical and practical guidance for the development of the hospice field (Huang & Gu, 2021). In addition, the British Hospice Association and universities are also working on research that aims to establish standardized processes and directions for the development of hospice service. These studies on hospice practice and theory provide a solid scientific basis for the UK government to formulate relevant laws, regulations and guidelines. When the British Audit Office evaluates hospice organizations, it especially takes the training of medical staff as one of the important indicators to measure the quality of the organization. At the same time, hospice volunteers are similarly required to receive relevant training to ensure that they are able to provide better quality services (He et al., 2023). The assessment methods for hospice practitioners in Chinese medical schools are different from those in foreign countries, such as exposition, thesis, and practical operation, which are based on closed-book exams, and there is a general phenomenon of "focusing on knowledge but not on competence, focusing on theory but not on quality, and focusing on results but not on the process" (Huang et al., 2020).

The American Nurses Association has established a very detailed qualification system for hospice and hospice service staff, which clearly defines the scope of responsibilities of each medical staff. In the United States, hospice education and training are mainly carried out by a variety of social organizations and institutions, including some influential organizations, such as the End Stage Nursing Education Consortium, the Palliative Education Team, and the National Board for Certification of Hospice and Palliative Nurses, and others. These organizations have taken a variety of specific measures to promote the development of hospice and hospice service. These organizations have taken a variety of specific measures to advance hospice education. Meanwhile, hospice and palliative teams in Taiwan have also established a comprehensive system of introductory courses and advanced training for healthcare professionals. These trainings cover not only theoretical knowledge lectures, but also clinical practice operations. It is worth mentioning that their training materials are very rich and diverse, including standardized and complete handouts, audio-visual teaching materials, professional journals, manuals of diagnostic and treatment routines, video teaching CD-ROMs, and compilations of theses, and others. These materials constitute a set of very systematic and professional educational templates. Towards the end of the 20th century, Mainland China began to see the emergence of specialized works on hospice care, such as "Hospice Care Studies" and "Hospice Care Studies—Management at the End-of-Life Stage". At present, the teaching materials used are basically compiled by college teachers, favoring theories and lacking the summary of practical experience. Up to now, only some medical colleges and universities have offered hospice courses, which focus on historical background, domestic and international status quo, ethics and culture, relevant laws and policies, and clinical symptoms, with less coverage of the concepts of life and death, communication with patients and their families, and clinical practice. There is less coverage of the concept of life and death, communication with patients and families, and clinical practice. The teaching methods in foreign countries include lectures, role-playing, clinical case seminars or group exchanges, and others. In China, the teaching methods are more single, mainly based on theoretical lectures in the classroom, with less experiential exchanges and clinical internships, which is not conducive to the cultivation of hospice talents.

Due to the late start and slow development of hospice care in mainland China, a considerable portion of teachers have not received systematic training, and at most they have gone to the United Kingdom, the United States, Japan, and Taiwan and Hong Kong to receive short-term exchange training, so teachers with both theoretical knowledge and clinical experience in hospice care are very rare, which results in a lack of high-quality teacher resources even if schools and hospitals are interested in offering related courses (Huang et al., 2020). At the same time, it must be recognized that there is a significant gap in the knowledge and skill level of medical professionals in the field of hospice care. In recent years, numerous social organizations of public welfare nature have actively engaged in the training and development of hospice professionals. In 2015, the Chinese Nursing Association set up the "Hospice Nursing Group" under the Oncology Nursing Committee, which carries the important responsibility of promoting the concept and practice of hospice care, and is committed to improving the level of specialization and overall nursing capacity in this field by holding regular national training courses for hospice nurses. In addition, the Beijing Association for the Promotion of Living Advance Directives has also actively cooperated with international advanced institutions to organize the Training of Trainers for Quality End-of-Life Care for All in 2016. The implementation of this training model has achieved remarkable results, and as of 2020 has successfully trained 88 trainers who are located in 32 cities across the country, making a positive contribution to promoting the development of hospice care in China. Together, these efforts have contributed to the updating of knowledge and upgrading of skills in the hospice field.

The cultivation of talent is the solid cornerstone of China's hospice industry, while education is the core force that drives the hospice discipline forward. It profoundly influences the change of people's conception of life and death, shapes the professional skill level of the hospice field, and in turn determines the quality of hospice service and the broad horizon of the discipline's future development. From an in-depth study of advanced countries such as the United Kingdom, the United States, and Japan, we can clearly see that while hospice practice is becoming more and more sophisticated, related education is also advancing in an orderly and synchronized manner. This close integration of education and practice provides a solid guarantee for the vigorous development of hospice care. In Taiwan, the Hospice and Hospice service Foundation, the Hospice Association, and the Hospice and Palliative Medicine Association, among many other specialized agencies, are like bright lights in the field of hospice; they are not only leading organs and academic halls, but also messengers of charity and bridges of information. They have made unremitting efforts to sow the seeds of hospice knowledge and actively transmit and exchange hospice technology and information, in the hope that these seeds will take root and grow in broader soil, eventually blossoming into gorgeous flowers and bearing fruit.

2.2.2.4 Hospice Service Models for Patients with Advanced Cancer

Influenced by multiple factors such as differences in cultural concepts and insufficient institutional protection, the hospice care of advanced cancer patients in Chinese Mainland is still in its infancy and exploration stage. At present, research in this field mainly focuses on the impact of a single intervention on patient care effectiveness, and a comprehensive and systematic hospice service model has not yet been constructed (B. Yang et al., 2018). At the beginning of the development of hospice care, the issue of how to develop hospice care with Chinese characteristics in a variety of forms according to the basic realities of mainland China was raised as an issue. Based on this issue, Zhu et al. (2016) have conducted a number of practical studies to explore effective hospice service model. You (2008) is committed to exploring the feasibility and practical path of establishing hospice service units or wards within comprehensive hospitals from both theoretical and practical dimensions, and have constructed a care model for advanced cancer patients. This model closely connects medical staff, family members, and end-of-life patients, forming an interactive and complementary care network. Among them, the awakening of medical humanitarianism among medical personnel, the extension of filial piety among family members, and the transformation of the concept of death among end-of-life patients are regarded as the core elements of this model. These elements together constitute the deep connotation of China's modern hospice service model, which not only demonstrates the spirit of humanistic care, but also injects new vitality and thinking into the modern medical system. Based on past practice, researchers such as Xie (2009) further proposed the need to establish a comprehensive operational model for a hospice care service team. This team should include doctors, nursing staff, social workers, religious figures, psychological counsellors, nutritionists, volunteers and charitable support, as well as other relevant department personnel, and the patient's family and friends should also actively participate. This cross disciplinary collaboration model will help provide more comprehensive and humane hospice care services.

Using a comparative experimental approach, Patel and May (2017) analyzed that it is difficult for a single discipline or measure of intervention to cope with the complexities of patients on multiple levels of physical, psychological, social support, and spiritual care. For example, ttraditional nursing methods have a certain effect in alleviating physiological pain in patients, mainly achieved through pain symptom management. However, due to the lack of professional psychological knowledge, nursing staff often feel helpless when facing the psychological distress of patients. Compared to others, the multidisciplinary collaboration model has shown outstanding results in significantly improving the quality of life of end-of-life patients by promoting close cooperation and collaboration among interdisciplinary teams. It has also achieved better performance in clinical measurement results and patient satisfaction. This model is committed to providing comprehensive and multi-level support and care for patients and their families, ensuring that patients can feel full dignity and peace at the end of their lives, and achieve a harmonious unity of body, mind, and society. Therefore, the multidisciplinary collaboration model plays an important role in improving the quality of life of patients, and due to its close integration with hospice service, it has been widely applied in the hospice service of advanced cancer patients in recent years.

The multidisciplinary model of hospice care is a patient and family-centered approach to providing hospice care to terminally ill patients through a collaborative approach between people from different disciplinary backgrounds. Since 1967, close collaboration between multidisciplinary teams has become an indispensable part of hospice service. Team members provide multi-dimensional hospice care services to patients through mutual coordination, in order to improve their quality of life during their end-of-life stage.In Canada's A Model to Guide Hospice care based on National Principles and Norms of Practice, published in 2002 and revised in 2013, it is recommended that The hospice team consists of bereavement counsellors, chaplains, dieticians, integrative therapists, nurses, occupational therapists, pharmacists, psychologists, physicians, physiotherapists, social workers, speech therapists, caregivers, volunteers and counsellors, with other members being administrators and logisticians, and the service is a highly interdisciplinary activity carried out by an interprofessional team.

The Taiwan region advocates a team wide service model with clear division of labour and close collaboration in hospice service, providing a practical and creative path for the construction of hospice service teams. In this model, family members are responsible for providing daily life care and emotional support, while medical staff help patients relieve pain and control the progress of disease through regular professional services. Professional caregivers provide refined physical care and care, while social workers play the role of coordinators, integrating various resources such as legal policy consultation, family support, community resources, and hospital services. In addition, volunteers, including religious figures, also provide mental comfort and temporary care services for patients (Wang & Wang, 2022). This comprehensive service model not only fully explores the potential of existing human resources, but also ensures the professionalism and effectiveness of services. In Chinese Mainland, an ideal multidisciplinary hospice care team usually includes medical social workers, nursing staff, residents, rehabilitation specialists, nutritionists, psychological consultants and other members. Maintain close cooperation and communication among departments: Resident doctors are mainly responsible for treating patients based on their specific conditions; The nursing team provides daily care work, especially close attention to skin condition; Pain specialists help patients effectively control pain; Psychological counsellors focus on the mental health of patients and their families, providing necessary counselling and support; The department of traditional Chinese medicine helps patients relieve discomfort symptoms such as vomiting and anorexia through acupuncture and moxibustion, traditional Chinese medicine and other auxiliary treatments. It is particularly important for hospital managers to set the work of medical societies as the core personnel for the management of hospice care cases based on the needs of hospice care services. They should be responsible for regularly organizing coordination meetings, comprehensively and dynamically evaluating the survival needs and quality of life of patients, coordinating and dealing with communication difficulties within families, assisting in integrating various social resources as much as possible, reviewing the life stories of patients through narrative medicine, and carrying out mutual assistance and support activities among similar patients (Meng et al., 2020). This team collaboration model aims to provide patients with more comprehensive and refined care services, so that they can receive maximum respect, care, and comfort in the final stage of life.

Using satisfaction, symptom control, pain management effectiveness, and quality of life of end-of-life patients and their families as evaluation indicators can more objectively demonstrate the actual effectiveness of multidisciplinary collaboration in hospice care from the perspective of service recipients (Yuan, 2017). The study by Dai et al. (2018) further confirms that the intervention of multidisciplinary nursing teams can compensate for the shortcomings of traditional team structures and significantly improve the quality of life of patients. In addition, the findings of researchers such as Wang (2020) are also quite enlightening: for end-stage cancer patients who implement a multidisciplinary holistic care model in hospice care, the average satisfaction level of their various needs is as high as 87.3%. During this process, the functions of specialized nurses in various fields were fully utilized, especially in terms of medication guidance and psychological counselling, with satisfaction rates exceeding 90%. These data strongly demonstrate the significant effectiveness of multidisciplinary collaboration models in improving the quality of life of cancer patients, effectively controlling symptoms, increasing patient satisfaction, and alleviating patient pain. At the same time, they also significantly enhance the overall satisfaction of patients and their families with medical services.

The multi-disciplinary service model of hospice service has been improved and optimized based on medical care, creating a new interdisciplinary service model that achieves complementary advantages and innovation among disciplines to a certain extent. The multidisciplinary service model of hospice service is applied to advanced cancer patients, providing comprehensive care based on their different needs, including physical, psychological, social, and spiritual support. Therefore, the multidisciplinary model of hospice service can provide a more comprehensive and systematic care strategy for terminally ill patients and their families. For patients with malignant tumours, this model can significantly improve their quality of life at the end of their life. When this multidisciplinary collaboration model is applied to advanced cancer patients, it can provide comprehensive care covering physical, psychological, social, and spiritual aspects to meet the diverse needs of patients. This comprehensive care not only focuses on the patient's physical condition, but also helps them achieve higher quality of life in the final stage of life (Amano et al., 2015).

Obviously, the multidisciplinary collaboration model is a widely recognized and promoted hospice service model in existing research, however, hospice service in mainland China is in their infancy, and the structure of the multidisciplinary team model is still unsound and lacks a quality control mechanism, which makes it difficult to achieve normalized operation, and the phenomenon of "flash in the pan" is more common.

In this regard, the macro-level obstacles to the government policy support is still insufficient (Li, 2022), the meso-level impact of the public medical institutions for hospice service related to the pay system, standardized training, resource ratios and other aspects of the optimization of the health care personnel (Y. L. Yang et al., 2023), micro-level differences in personal demands and different value concepts (Wang & Niu, 2019), the service supply side of the pressure of service and the lack of value. The lack of service pressure and sense of value on the service provider (Chen & Wang, 2018). Take healthcare workers as an example: healthcare workers are the main team coordinators, but healthcare workers in mainland China have been in a saturated working condition and lack professional hospice knowledge and skills to cope with the multiple needs of patients with advanced tumors, coupled with the lack of supportive policies such as medical insurance and salary system, most team members participate in hospice service part-time or on the basis of humanitarianism during their rest time, resulting in a high mobility of team members. The high mobility of team members leads to a lack of continuity in the hospice service provided.

In addition, public hospital administrators and healthcare professionals often focus on the interests of patients and their families, while ignoring their own interests, and the ultimate goal of hospice service is to satisfy a single, patient-centered interest. If the patient's interests cannot be responded to, it means that the hospice service carried out has no meaning and value. In fact, the core value of "patients' interests first" does not mean ignoring the interests of other related groups such as healthcare workers, but rather, through the internal perfect management mechanism, to improve the sense of identity, dignity and honor of stakeholders, so as to consciously pursue the value goal and standard of "patients' interests first". The value goal and standard of "patient's interest first" is externalized into the value of hospice service for advanced cancer patients.

2.2.3 Summary

Based on the analysis of theory of stakeholder, hospice care service is a multidisciplinary collaborative system composed of different roles. The manager shall clarify the interest demands of all stakeholders, coordinate and ensure long-term and stable cooperation with stakeholders, enabling all stakeholders to participate in service management and obtain positive service benefits. When the personal demands of hospice service stakeholders are effectively responded to, potential service conflicts and contradictions will be effectively resolved.

Research has found that many patients and medical institutions have high expectations for achieving a high-quality multi-disciplinary collaborative service model for hospice service. However, the quality of this team collaboration is not achieved overnight, but is deeply influenced by various factors, including the training level of team members in collaboration, their accumulated experience, mutual humanistic care, and the organizational structure of team collaboration. These factors together constitute the cornerstone of multidisciplinary collaborative hospice service quality (Silbermann et al., 2013). Xu et al. (2023) pointed a study of volunteer groups and the general public and found that the overall willingness to accept or participate in hospice services was at a low to medium level, highlighting the need and urgency to carry out publicity, promotion and life education activities. He et al. (2021) conducted a survey study and believed that the cognitive level of medical staff is an important factor affecting their willingness to engage in hospice care work. The results of the survey on healthcare workers' participation in hospice service hospitals further verified that hospice service experience, experience of witnessing the dying process of terminally ill patients, the nature of the organization, the type of the organization, and the job position were the main influencing factors on the willingness to participate. Statistically analyzed, the need for training in hospice communication and social support was stronger (91.32% to 93.49%) (C. Yang et al., 2023), with groups who knew about hospice having higher motivation and initiative in learning hospice skills. The study generally agreed that measures such as strengthening hospice professional knowledge and skills training for medical staff, establishing and improving corresponding hospice performance evaluation standards and incentive systems, and increasing public awareness and social support are necessary ways to encourage and guide more organizations and medical staff to take the initiative to participate in hospice service (Teng et al., 2022).

As mentioned above, there are differences in the purposes of the relevant subjects of hospice service participating in the services, that is., they participate in the services based on their own interests and values, and their motives for participation are not exactly the same. Scientific and correct identification of hospice service stakeholders' participation demands and motives has an important role and significance in exploring hospice stakeholders' willingness to participate and improving the quality of hospice service. Currently, the membership, cooperation, training, and application status of the multidisciplinary collaboration model have not yet matured, and there is a need to continue to explore standardized, standardized, and localized hospice passport care models in an effort to provide high-quality hospice service for terminally ill patients. In view of this, this study considers the hospice service mechanism based on stakeholder interest claim orientation to be one of the breakthroughs in the localized development dilemma.

2.3 Studies related to quality of life in patients with advanced tumors

In recent years, quality of life evaluation has gradually become an indispensable part of the medical evaluation system, and it is also inevitable to avoid the topic of "death" as an inevitable end to life. Although it is widely accepted that death is an inevitable part of life, the belief in delaying death through medical technology in modern society is stronger than ever before. However, this has also led to increasing attention and discussion on the physical and mental pain caused by overtreatment for advanced cancer patients. The description of modern medical scenes by French historian (Michel Vovelle, 2004) reveals another level of reality: behind the diligent and busy medical staff, dying patients are often deprived of the right to pass away peacefully. Their fate is placed in the hands of others, and even their basic right to know about their own illness is difficult to guarantee. In many situations, even if medical technology or drugs can temporarily prolong the vital signs of terminally ill individuals, this is often accompanied by immense pain and hopeless struggles. From the perspective of life dignity, this is undoubtedly a form of destruction. Although the advancement of medicine has to some extent delayed the onset of death, it does not mean that it can effectively improve the quality of life of terminally ill patients; What is even more severe is that the sense of loneliness experienced by the dying in modern society on the journey towards the end of their lives has reached an unprecedented level. Therefore, we need to re-examine and evaluate the goals and methods of medicine to ensure that while respecting life, we can also give the dying the care and dignity they deserve.

With the increasing incidence of tumours, have become an important topic in human medicine. At present, the mechanisms of tumour occurrence in many systems are still unclear, leading to suboptimal early detection and diagnostic rates in medical institutions. Entering the final stage is still the fate of most clinical cancer patients. Late-stage cancer patients often suffer from cancerous pain and various discomfort symptoms. Due to the high difficulty of treatment, frequent complications, and complex condition, these patients generally experience problems such as loss of appetite, malnutrition, and decreased resistance during treatment. The high cost of continuous treatment and care has brought serious economic burden to the patient's family, and the accompanying family members are physically and mentally exhausted. At present, in the situation where modern medical technology cannot cure, how to better care for the quality of life of advanced cancer patients is still the top priority of clinical research.

2.3.1 Factors affecting quality of life in patients with advanced cancer

Reviewing the existing research results, there are numerous relevant factors affecting the quality of life of patients with advanced tumors. Further analysis reveals that most domestic and international studies have been conducted to horizontally investigate the reality of patients with advanced tumors of a certain severity in different treatment stages, analyze the relationship between the elements and their quality of life, and explore the improvement of their physical and mental conditions after the implementation of interventions to improve the quality of life, but other factors (such as personality characteristics, cognition and coping styles, and so on) have not been included in the analysis. In this regard, this section focuses on the physical status, psychological and spiritual support, and social support of advanced tumor patients, and explores the research results of improving the level of quality of life of advanced cancer patients through an overview of clinical applications, therapeutic approaches, care considerations, and development prospects.

2.3.1.1 Physical dimension

Physical sensation is the most intuitive factor that affects and reflects the quality of life of patients with advanced tumors. Patients with advanced tumors are mostly associated with classic somatic symptoms such as pain, insomnia and cachexia, and may also be accompanied by the respective characteristic pathologies of each systemic tumor, for example: respiratory failure in advanced respiratory tract tumors (T. T. Liu et al., 2019), feeding difficulties in advanced gastrointestinal tumors (Wang et al., 2019), dysuria in advanced urinary tract tumors (Luo et al., 2014) and so on. These signs have a serious impact on the quality of life of patients with tumors. How to manage the onset of these somatic symptoms has been studied and developed in clinical research.

Pain is an unpleasant sensation and experience associated with injury. Under normal physiological conditions, it provides an alarm signal that the body is under threat, serves to avoid injury or alerts the body to the presence of a lesion, and is an indispensable function of life's self-protection. The pain experienced by cancer patients mainly stems from the presence of the tumour itself or its invasion of surrounding tissues, such as blood vessels and nerves. In addition, when tumour tissue exerts pressure on important tissue parts such as nerve roots, nerve trunks, nerve plexus, brain and spinal cord, periosteum or bones, it can also cause significant pain (Paice et al., 2016). It is the most important challenge for patients with advanced tumors, with an extremely high incidence of 64% on the one hand, and 33% of these patients still experiencing pain after treatment (MHJ et al., 2007). On the other hand, the severity of pain is notable, with the most commonly used numeric pain intensity scale being used to assess pain up to a numerical score of 8 or more out of 10 (Du et al., 2021). Cancer pain, as a concomitant process in the course of tumor disease, is constantly evolving with the pathological state. Pain is often the predominant symptom in patients with advanced cancer, which not only increases physical pain but also causes significant psychological and psychiatric trauma. Therefore, early implementation of targeted and effective pain management for patients with strong analgesic complaints is crucial (Y. J. Wang, 2021). Cancer pain is a huge ordeal for patients with advanced and terminal tumors. The intense, recurrent and unbearable nature of this pain has become a major demand for patient treatment and one of the key elements of clinical advanced cancer treatment (Xiao et al., 2018). According to the 2020 China Cancer Statistics Annual Report, due to the low awareness of cancer pain among patients and their families and the neglect of pain management by some medical practitioners, inadequate cancer pain treatment is still a common phenomenon, and only about 30% of patients can receive standardized analgesic treatment. Younger patients have a more urgent need for "pain-free" and want to control pain in a timely manner, so their compliance with treatment is higher, while some older patients have misconceptions about opioids, such as fear of drug "addiction" and adverse drug reactions, and prefer to tolerate pain rather than receive analgesia. Some elderly patients have misconceptions about opioids, such as fear of drug addiction and adverse effects, and prefer to tolerate pain rather than receive analgesic drugs. Patients who tolerate pain without medication will suffer from pain sensitization, and the same level of pain will be felt more intensely, and enduring persistent cancer pain day and night will make patients doubt or even feel like giving up treatment. Gastrointestinal tumors (esophageal, gastric and colorectal cancers) are often accompanied by obstruction of the gastrointestinal tract when the tumor reaches an advanced stage, making it difficult or impossible for patients to eat (He et al., 2011). The patient's pain is greater. Similarly, respiratory failure due to respiratory tumors or tumors in the peri-tracheal tissues also relies on surgical techniques such as stenting and tracheal reconstruction to relieve symptoms (Fu et al., 2019). Whether these treatments cause excess pain to the patient's quality of life at the end of life and how to improve some of the surgical measures necessary to prolong the patient's life status still deserve further investigation.

Sleep has a huge impact on human physical health, mental health, disease recovery, social cognition, and emotional disorders (Medic et al., 2017). Insomnia is now considered to be a typical sleep disorder. As an important influencing factor of somatic sensation, insomnia occurs particularly frequently in patients with advanced tumors and has various mechanisms of origin, such as surgical trauma, radiotherapy and progression of tumor deterioration, causing respiratory distress, frequent vomiting, diarrhea, urinary frequency, palpitations, cachexia and other systemic discomforts, which in turn lead to insomnia; Insomnia can be caused by the side effects of chemoradiotherapy (Parker et al., 2012).

The quality of sleep is largely dependent on the patient's mood, perceptions and feelings, and is influenced by many factors other than the treatment plan, making non-pharmacological treatments to achieve mental relaxation and sleep more acceptable to patients. The treatment methods commonly used in traditional Chinese medicine, such as acupuncture, moxibustion, and physiotherapy have been used in insomnia treatment program, with a focus on harmonizing and maintaining the patient's relaxed state of mind and body. Some TCM practitioners have proposed the use of Chinese herbal acupressure, combined with nervine, tranquilizer and harmonizer compound vine agents (sour date palm, Yuan Zhi, Hehuanpi, Fu Shen, Huang Lian, Cinnamon and Nightshade), to regulate the movement of Qi, blood and fluid throughout the body, activate the body's nerves and regulate the functions of the five internal organs, thus improving the patient's sleep quality, and studies have shown that this solution has significantly improved the effectiveness of sleep aids compared to Western medicine alone (Ma et al., 2021).Other studies have shown that external acupressure, combined with the meridian circulation theory of Chinese medicine, can also significantly improve the sleep disorder of patients undergoing long-term chemotherapy (Qiu et al., 2021).A whole range of TCM care techniques have been developed by oncology research in some hospitals, including: emotional care, TCM massage, Chinese herbal infusions and Chinese herbal enemas, and others. The difference in sleep quality between patients with TCM care compared to the conventional care group was statistically significant ($p<0.05$) (Guo, 2016). There is no end to the exploration of such palliative insomnia treatment options, and the general direction of combining pharmacological treatment with nursing care was affirmed by the patients.

Cachexia is mainly caused by metabolic disorders in the body (Schcolnik-Cabrera et al., 2017).A multifactorial syndrome characterized by persistent skeletal muscle mass loss and adipose tissue loss that cannot be reversed by conventional nutritional therapy, resulting in progressive organ failure (Dev, 2019).The disease has a serious impact on the quality of life of patients with advanced malignancies and accelerates death (Fearon et al., 2011). The incidence of cachexia in patients with tumors is very high, with studies showing that around 40% of patients have already developed cachexia by the time their tumor is diagnosed, with the highest incidence in digestive tumors. At present, nutritional support therapy is mainly used clinically to alleviate the inevitable cachexia in advanced tumor patients, but there are limitations and the efficacy is limited, treating the symptoms but not the root cause. The treatment of malignant disease is a major challenge. To achieve optimal outcomes, cachexia should be managed using a multimodal approach of antitumor therapy + nutritional interventions + symptom support (for example: relief of anorexia) + psychological support + exercise.

Ma et al. (2020) have proposed the theory of "deficiency labor", suggesting that the use of some Chinese herbal formulas can tonify the deficiencies and dissolve the stagnation, so as to strengthen the spleen and eliminate the stomach, tonify the liver and kidney, tonify the qi and invigorate the blood, dissolve phlegm and detoxify the toxins. From current research and practice, TCM treatment of cachexia demonstrates significant advantages and is able to effectively improve the course of the disease through a variety of pathways. Specifically, traditional Chinese medicine treatment has shown significant effects in improving patient diet and sleep quality, reducing muscle and fat consumption, and lowering inflammatory cell levels, thereby bringing comprehensive therapeutic benefits to patients (Sang et al., 2021). This discovery suggests that in future basic research and clinical observation, more attention to the overall intervention of traditional Chinese medicine may become a new direction for the treatment strategy of cancer cachexia, bringing new hope to patients.

2.3.1.2 Psycho-spiritual dimension

With the influx of humanistic thinking in recent years, the medical model has shifted from a single physiological treatment-oriented model to a whole-person care model with a balance of "physiological-psychological-social". Mental health has become an important component of modern medicine in the context of social transformation, which is "people-centered, service-based and attentive to the inner needs of people". A poor psychological state has a suppressive effect on the immune function of the body and affects the immune surveillance of cancer cells, resulting in active cancer cells, which not only affects the occurrence and development of tumors, but also the treatment and prognosis. Late-stage cancer patients generally experience negative emotions such as anxiety, depression, sadness, and despair (Chen et al., 2002). These negative emotions not only exacerbate the physical symptoms of patients, but may even lead to self-injury and suicidal ideation, greatly damaging the quality of life of advanced cancer patients (W. Wang & X. Ma et al., 2021). Therefore, in the comprehensive treatment of cancer patients, it is particularly important to pay attention to and effectively intervene in these negative emotions. In the hospice care of patients with advanced cancer (expected survival less than 56 months), the relief of psychological symptoms should be given equal importance to physical relief in order to effectively improve the quality of life, and is therefore recognized as the most important treatment. The most important aim of hospice care is to improve the quality of life.

In 1970, Kubler Ross's outstanding work "The Edge of Life and Death" proposed a five-stage theory of the mental state of terminally ill cancer patients: denial, anger, bargaining, depression, and acceptance. This theory has sparked a revolutionary trend in the field of death studies. Contemporary researchers generally agree that the psychological response process of advanced cancer patients usually goes through five stages in sequence: denial, fear and anxiety, compromise, depression, and acceptance. Patients experience varying degrees of psychological distress during all stages of the disease. This has a significant impact on the quality of life of patients. 1.pessimism and despair about their lives, a sense of misfortune, a loss of hope for improvement and a fear of death; 2. sadness about the pain they have suffered, believing that they are suffering from the side effects of their treatment and the pain of their illness; 3. unhappiness with their families and loved ones, unable to let go of their family feelings; 4. guilt about the financial burden of the medicine they have incurred 5. prolonged isolation from society, which prevents the realization of one's social attributes and the satisfaction of self-esteem needs (Yu & Fan, 2021).

Medical personnel at home and abroad have conducted extensive and in-depth research on psychological intervention for advanced cancer patients, using various methods such as mental health education, information support, music therapy, and cognitive-behavioural therapy, and have achieved significant therapeutic effects. These qualitative studies not only enhance our understanding of the psychological state of patients, but also provide a basis for developing more effective intervention measures. In psychological intervention for patients with advanced tumours, researchers have set three core goals: alleviating pain and relieving negative emotions; psychological support, improving interpersonal relationships and integrating naturally into society; and optimism and cheerfulness, actively cooperating with treatment and regaining the value of life. And four major principles were proposed: targeted diversion, guiding the correct view of death, stimulating subjective motivation, and integrating theory and clinical (Wang et al., 2016). In order to achieve the goals of psychological interventions as far as possible and in line with the relevant principles, a variety of classical psychological interventions have been proposed and applied in clinical practice: 1. Listening and supportive psychological interventions. Most oncology patients have low self-esteem and anxiety, and are reluctant to communicate and isolate themselves. Patiently listening to patients' verbal or non-verbal expressions of emotions is the most crucial psychological intervention. In the relatively closed environment of hospitalization, patients' emotional fluctuations come largely from fluctuations in their condition, while advanced tumor symptoms are difficult to control. Therefore, helping patients to build a solid psychological defense of life and death is the only way to relieve negative emotions such as pain and disgust in a timely manner; 3. Relaxation and catharsis. Nursing staff help patients to liberate themselves from a tense state of mind and enjoy the joys of life; 4. Family communication and affectionate support. Family members are the main social connection for patients. Only by giving psychological support to patients at the level of affection can we complement the social attributes of human beings and enable patients to truly respect and love themselves and find value in life; 5. Combining symptom control with psychological intervention. This requires medical staff to be able to give patients timely interventions such as music, hypnosis and chatting for sudden cancer pain and insomnia, so as to eliminate negative emotions whenever and wherever they arise. More and more clinical experts tend to believe that using complementary therapies such as aromatherapy has significant benefits for critically ill or terminally ill patients. This type of therapy helps alleviate symptoms of anxiety and depression in patients, while reducing the dosage of medication required for end-of-life patients when feeling pain and depression. Through this approach, it is possible to reduce the side effects of some medications, allowing patients to experience physical and mental relaxation and peace, thereby improving their quality of life.

As a group of people who rely on their families for long-term care, there is a strong dependency between patients with advanced cancer and their family caregivers. Because families are also important participants in the psychological construction of patients in end-of-life care, researchers have also studied their responsibilities, among which helping medical staff to work together effectively in psychological counselling is considered important. They believe that families, as the people closest to the patient, are best placed to understand the cultural and ideological contexts that shape the patient's psychological disorders and can help inexperienced caregivers, while avoiding unnecessary misunderstandings. They believe that family members, as the closest people to the patient, are the most knowledgeable about the cultural and ideological backgrounds that shape the patient's spirituality and can help inexperienced caregivers to more effectively guide the patient to live positively and face death openly while avoiding unnecessary misunderstandings and ethical conflicts (Chen et al., 2008). In addition to conducting in-depth research on the physical and mental condition of patients themselves, the academic community is also paying increasing attention to the group of family caregivers, who silently bear various pressures. The research results indicate that the negative emotions experienced by family members, including anxiety and depression, have significantly intensified. Compared with conventional reference standards, its emotional assessment score is significantly higher, reflecting a significant psychological stress state. Of particular note, caregivers of malignant tumour patients are even more prominent in negative emotional expression than the patients themselves. This discovery deeply reveals the importance and urgency of providing emotional support for caregivers, which not only helps to improve their mental health status, but also plays an indispensable role in improving the quality of care and the overall well-being of patients (Grunfeld et al., 2004). There is no single factor influencing these strong emotional and psychological feelings, and systematic psychological treatment can improve all types of emotional disturbances in patients with advanced cancer, which in turn can show better physical and psychological outcomes, including reduced side effects of advanced cancer treatment, reduced physical discomfort, and reduced anxiety and depressive symptoms (Chen & Ahmad, 2018).

The psychological intervention measures adopted by China for advanced cancer patients are diverse, mainly including social support, psychological counselling, therapeutic communication, structural psychological intervention, narrative medicine, and empathy with patients. These measures play an important role in alleviating psychological pressure on patients and improving their quality of life (Luo et al., 2019). Some competent healthcare institutions have proposed the formation of multidisciplinary collaborative teams to physiotherapy patients' psychological disorders, for example: the attending physicians of each department are responsible for the hospice care and symptom control of patients, providing the basis for reducing their negative emotions; the head nurse manages the nursing team, overseeing the implementation of the end-of-life care plan, controlling the quality of care and enhancing patients' sense of security; the case manager carries out timely team coordination and evaluates patients' psychological status. the nurse team carries out detailed planning and provides guidance on clinical care. The team of nurses also focused on health education to increase patients' acceptance of their condition and end-of-life care, laying the foundation for patient compliance with the programmed. The results showed that these practices significantly improved patients' feelings of anxiety, low self-esteem, depression and a happier late treatment experience (B. Yang et al., 2018).

Overall, research on the psychological pain of malignant tumour patients in China is still insufficient, and there is a lack of in-depth exploration of its dynamic evolution process. Compared with clinical treatment, there is not yet sufficient attention paid to the recognition and active intervention of psychological pain, and there is also a lack of standardized management of psychological pain in advanced cancer patients (Zheng et al., 2020). It is gratifying that medical staff are gradually paying more attention and attention to the intervention and research of psychological problems in advanced cancer patients. How to integrate more psychological intervention techniques and methods into the framework of hospice service is still an important issue that needs to be further explored.

2.3.1.3 Social support dimensions

Social support is uniquely important for patients with advanced cancer, as the social nature of human beings dictates that when a patient is faced with a serious disease, their parents, spouse, relatives, volunteers, hospital, government and other groups with whom the patient has a close or distant social relationship will give appropriate support, whether in the form of financial, material, psychological, policy or humanistic care, to the patient's social attributes, personality support and the "physio-psycho-social" medical model. This support, whether in the form of financial, material, psychological, policy or humanistic care, is a powerful complement to the patient's social attributes, personality support and the "physio-psycho-social" model of care. Social support is linked to the health of patients with advanced cancer. Social support, especially informal support, is essential for patients coping with advanced cancer (Yang & Wang, 2006). Social support, especially informal support, plays a crucial role in the disease response process of advanced cancer patients. The more social support patients receive, the stronger their ability to adapt to various adverse reactions caused by the disease. Individuals with a good social network can access more health information and medical resources during illness, effectively improving the quality of life for patients and their families. Social support can provide protection for individuals under stress and play a role in buffering stress responses. Yang et al. (2005) have shown a significant negative correlation between social support and depressive mood, indicating that older advanced cancer patients with more sufficient social support have less depressive mood. Social support plays an important role in psychological intervention, helping to stimulate patients' confidence in fighting cancer, cultivate their optimistic and open-minded emotional attitude, and significantly improve their quality of life. As one of the most potential resources for advanced cancer patients to cope with diseases, the more social support they receive, the less negative emotions they experience such as anxiety and depression.

The long periods of bed rest and round-the-clock caregiving create a close and inseparable relationship between patients with advanced cancer and their family caregivers, with the patient acting as a mere resource consumer within the family and the family caregiver being the source of the bulk of resource acquisition in the personal support network. The various types of difficulties in the caregiving process are in turn constantly differentiated by changes in family structure or family caregiving patterns, a development that can be influenced by the traditional Chinese division of family roles, and some researchers have analysis (Shen et al., 2020). Taking breast cancer, which has a high incidence rate and mortality among women in China, as an example, many patients have a lot of uncertainty and uncertainty in the process of diagnosis, treatment and rehabilitation. These uncertainties and unknown factors not only increase the psychological burden on patients, but also affect their treatment compliance and rehabilitation outcomes. Therefore, in the process of diagnosis, treatment and rehabilitation of breast cancer, it is of great significance to strengthen patient education, provide comprehensive information support, and establish an effective psychological intervention mechanism to improve the prognosis of patients and improve their quality of life. Influenced by China's unique cultural and social attitudes and relatively limited medical resources (Li et al., 2015). For these women with advanced breast cancer, the husband is the primary caregiver. Whether it is accompanying them to medical appointments, staying in hospital with them, and undertaking various care tasks such as feeding, bathing, dressing, and soothing them, their husbands are the main social support for them. However, studies have shown that the quality of life of these female patients is largely linked to the physical, psychological and financial health of their husbands, and that the quality of life of patients early in their care does improve significantly with strong social support (McLean & Jones, 2007).However, due to the profound impact of the prevalence, severity and persistence of advanced cancer caregiver burden on the quality of life of patients and caregivers (Tang, 2006), these husbands are in significantly poorer health than their peers and experience much higher levels of stress than normal husbands or other family caregivers (Hasson-Ohayon et al., 2010). The frequency of medical care can even put a strain on their financial resources, ultimately making it impossible to provide adequate social support to the patient, and the associated negative emotions such as anxiety and loss inevitably add to the psychological burden of the patient, resulting in a reduced quality of life for patients with advanced cancer. In addition to spouses, those who are sources of social support, such as parents of unmarried patients and children of elderly patients, also face a negative correlation between total caregiving time on the quality of survival of family caregivers of patients with advanced tumors, as well as negative effects on patients (Zhang et al., 2017).

The social support of patients mainly comes from objective and substantial assistance provided by families, medical personnel, and society, as well as subjective emotional experience support. It is worth noting that at different stages of advanced tumours, patients may require different levels of social support, so we need to provide targeted support based on the specific situation of the patients. At the same time, the effect of social support on patients is constrained by their individual characteristics, which requires that when providing social support, individual differences of patients must be fully respected and considered. In addition, the social support system also includes an undeniable aspect, which is the degree to which individuals accept and utilize social support. Different individuals exhibit significant differences in the support provided by social resources, and some patients may choose to refuse external assistance due to various psychological factors, despite being in a supportive environment. Especially for patients with advanced tumours, due to psychological resistance to their condition, they often tend to conceal their condition in social interactions, in order to reduce the external excessive attention caused by the disease, and thus maintain their psychological security and social dignity.The hope that keeping the disease a secret will put life back on track is a temporary relief, but the continued reduction or suspension of social relationships will further reduce the level of support available. In the face of this vicious circle, the researchers suggest three things: 1. For families with advanced oncology patients who are short of carers, they may be recommended to employ health workers to alleviate their exhaustion, depending on their financial situation; 2. Medical staff should also strengthen psychological interventions for patients' relatives to help them maintain a good social support network to ease the physical and mental load; 3. Improve the level of psychological resilience of patients and their families to ensure their quality of survival. The patient's family members should also be assisted in maintaining a good social support network to alleviate physical and psychological stress.

However, for patients with advanced tumours, relying solely on personal physiological and psychological development is insufficient to compensate for their weak social support. The survival needs of individuals are closely linked to society and others. When faced with difficulties or unable to cope with problems alone, they must rely on the assistance and supply of resources from others. Therefore, in the care of advanced cancer patients, strengthening the construction of social support networks and promoting effective connections between patients and society and others is an important way to improve their quality of life and ability to cope with diseases. It is only when the social support provided by multiple actors interacts in the context of the social network that the support function of the social network can operate and manifest itself through the network structure. In response to the realities of financial shortage and economic hardship of families with advanced cancer, China has been improving its medical reimbursement policies in the process of health care reform to relieve the financial pressure of key groups, including urban and rural medical insurance, employee medical insurance or New Agricultural Cooperative Medical Insurance, major medical insurance and commercial insurance. In the future, health protection for patients with advanced cancer will be complemented by medical insurance and commercial insurance, with the breadth of medical insurance complementing the professionalism of commercial insurance to better provide health protection for patients. Medical social workers are actively promoting the interpretation of medical insurance reimbursement policies, improving families' understanding of whether the policies apply to their own situation, helping to screen eligible families to link them to hospital fee waivers, and needing to contact relevant social organization to provide them with as much financial help as possible (Wang & Niu, 2019). In addition to purchasing various types of insurance, patients can apply for special relief funds and internet fundraising to alleviate financial pressure. Many charity projects are dedicated to helping families with advanced cancer patients to reduce their cost of living, provide high level medical services, offer living allowances and psychological healing. All these help and care from all levels of society give impetus to the strengthening of social support and contribute to the continuous improvement of the quality of life of patients with advanced cancer.

2.3.2 Summary

In summary, patients with advanced tumours will experience a long period of time in their final stages, often accompanied by various complex symptoms. The traditional care model often relies on the primary caregiver of the family to undertake all care tasks, while medical staff mainly provide supportive guidance. However, in this traditional specialized nursing model, medical staff have relatively limited knowledge and lack professional knowledge in ethics, psychology, life and death education, and spiritual care. This care model is difficult to meet the diverse needs of end-of-life patients and their families at multiple levels, including physical, psychological, spiritual, and emotional support. It is necessary to explore more comprehensive and humane care models to meet the diverse needs of patients and their families during the end-of-life stage. This section analyzes the specific connotations of quality of life for patients with advanced tumors from the physiological dimension, psycho-spiritual dimension, and social support dimension. Quality of life encompasses many aspects rather than just one or a few. Therefore, for advanced cancer patients, improving their quality of life inevitably requires a diverse supply of services. Further research also confirms that the management of hospice care services is not only influenced internally by core stakeholders such as demanders, implementers, and managers, but also significantly influenced by other external stakeholders such as government decision-makers and propagandists (Zhang & Zhang, 2023). This indicates that there is a complex interest game relationship between the supply and demand of hospice care services, and it is necessary to comprehensively consider the interests of all parties in order to achieve the optimization of services and the maximization of patient quality of life.

Research has confirmed that when the diagnosis, treatment and nursing plan match the core interests and demands of various roles, its implementation and promotion will be smoother. Based on stakeholder theory, a multi-party participation model plays an important role in improving patient quality of life and optimizing nursing services. Johnston (2019) used semi-structured interviews and focus group interviews to conduct in-depth research on diverse stakeholders such as cancer patients, healthcare managers, and community health workers. The study aims to analyse the perspective of using community health workers to improve palliative treatment for cancer patients, and based on this, propose a culturally appropriate palliative treatment intervention strategy. This culturally closely integrated palliative treatment intervention provides new ideas and methodological guidance for palliative treatment of cancer patients.

In recent years, Chinese researchers have actively conducted theoretical analysis and empirical research from the management dimension when exploring the factors influencing the demand for hospice care services and service quality. They focus on a hierarchical management strategy that focuses on service needs, where managers effectively communicate with multiple stakeholders to clarify the priorities of hospice care management and the importance ranking of various tasks. This involves precise positioning of institutional hospice service types, smooth communication mechanisms with various stakeholders, and scientific implementation of treatment projects for patient symptom management. Through this series of management measures, the aim is to optimize the process of hospice care services, thereby improving service quality and meeting the diverse needs of patients. Taking patients as an example, during the palliative phase, their psychological priority is to live a comfortable and valuable life; In the dying stage, being surrounded by loved ones and passing away comfortably and with dignity become their primary psychological needs (Pakenham & Martin, 2022).

Comprehensively, the application of stakeholder theory to hospice service for patients with advanced cancer is able to provide feedback on the interests of all stakeholders, summarize and analyze the different degrees of influence on hospice service in the process of the interest game, and provide a management perspective for comprehensive feedback and analysis to cope with the various complex issues in hospice service practice. In view of this, this study concludes that in the face of the diversified service management needs of hospice care (including patient care needs and service supply demands), the hierarchical relationship between service demand and service quality needs to be further studied and explored.

2.4 Development of a system of indicators for evaluating the quality of hospice service

2.4.1 Construction of hospice service quality evaluation index system

Quality indicators are a detailed and quantifiable description of the quality content of an object, providing a way to describe, supervise, and evaluate the quality of medical services (Coiera et al., 2017). The service quality of hospice care is a complex concept that includes multiple dimensions. It not only involves the micro level of the patient's physiological state, psychological state, social support, spiritual needs, and others., but also covers multiple dimensions at the meso and macro levels such as education and training, moral ethics, policies and regulations. These dimensions comprehensively reflect the quality of life of patients, the quality of care received, and the satisfaction of family members. Essentially, the service quality of hospice care is a manifestation of a service team composed of personnel from different disciplinary backgrounds, based on the integration of various resources and service support of the service team, jointly improving the quality of life of end-of-life patients. Based on the comprehensive analysis of existing research results, the research on the quality evaluation index system of hospice care services can be roughly divided into two categories:

One is that when constructing the hospice care service quality index system, researchers often use the comprehensive analysis method, which includes in-depth analysis and integration of multi-source data such as interview records, literature review, and hospice care service guidelines. The construction process involves the selection and establishment of evaluation indicators, as well as the assignment and calculation of weights. The selection of evaluation indicators is a key link to ensure the rationality of the evaluation, which requires the indicators to comprehensively and objectively reflect the core elements and quality characteristics of hospice care services. The allocation of weights is an important factor in determining the accuracy and scientific of evaluation conclusions. It requires reasonable assignment based on the importance, sensitivity, and representativeness of each indicator to ensure the fairness and effectiveness of the evaluation results. Therefore, how to scientifically and reasonably screen and determine service quality evaluation indicators has become the core issue in the construction process of the entire indicator system. Researchers often form a preliminary evaluation index library by reviewing literature and service guidelines, and formulate indicators at all levels based on theoretical models. In existing research, Donabedian's Structure Process Outcome model is often used as a theoretical framework (Liu et al., 2020). After determining the preliminary evaluation indicators, researchers usually use the Delphi method to invite experts to make authoritative evaluations of these indicators. Subsequently, the weighting method of evaluation indicators is used to determine the weights of each indicator. At present, the Analytic Hierarchy Process is considered a weighting method with good authenticity and applicability due to its ability to effectively transform the authoritative cognition and practical experience of experts into digital quantitative forms, and integrate opinions from all parties (Hu, 2012). This type of research mainly focuses on the construction of indicator systems related to the content of hospice care services. Starting from the dimensions of information and nursing plans, as well as supportive care, Walling et al. (2017) constructed evaluation indicators for the quality of end-stage care for patients Yang et al. (2018) developed a nursing quality evaluation index system based on professional nursing practice, which includes 4 dimensions and 36 specific indicators, targeting the hospice service needs of cancer patients. These studies provide important references and basis for the evaluation of the quality of hospice care services.

Another type of quality indicator system for hospice service is mainly based on the relevant frameworks established by global and regional hospice organizations. The core purpose of this system is to systematically monitor and report in detail the quality and development status of hospice service in different countries and regions. Taking the World Health Organization as an example, the Public Health Model constructed by the organization is a gradually refined evaluation framework, which includes four core dimensions and eighteen specific indicators for comprehensive evaluation of the quality of hospice service. It is also worth mentioning that the National Consensus on the Quality of Hospice service in the United States released a systematic guide for clinical practice in hospice service in 2004, which includes eight main dimensions and more detailed twenty-nine evaluation indicators. In the field of economic evaluation, The Economist Intelligence Unit has also given high attention to hospice service. Its Quality of Death Index, released twice in 2010 and 2015, used an evaluation system consisting of five dimensions and twenty specific indicators (The Economist Intelligence Unit, 2015). The establishment of these dimensions and indicators aims to provide a unified and comparable evaluation standard for hospice service on a global scale. The main function of these indicator systems is to provide guidance and reference, and to provide a clear list of service indicators for various regions and hospice care service institutions, so as to help them carry out service quality assessment work more scientifically and reasonably based on actual situations.

Currently, although most countries have established quality indicator systems for palliative passport protection, there are significant differences in the quality of these systems. From the perspective of indicator content, they mainly focus on physiological care, social support, and nursing referral, while the measurement of psychological, spiritual, cultural, ethical and legal dimensions appears relatively insufficient. In addition, these indicators are often designed only for specific caregivers or care environments, lacking universal indicators that can be widely applied to various hospice service contexts. More importantly, the quality indicator system of most countries does not have clear regulations on the frequency and time of measuring the quality of hospice passport protection, which to some extent weakens the accuracy and effectiveness of quality assessment. Therefore, future research should focus on developing more comprehensive and universal quality indicators for palliative passport care, and clarify the measurement frequency and time to enhance the scientific and practical nature of quality assessment (Zheng et al., 2021).

2.4.2 The necessity of constructing a hospice service quality evaluation system

There is a big gap between domestic and foreign research on hospice service quality evaluation. There are more studies on hospice service quality index system in foreign countries, but there is a lack of universal comprehensive evaluation index system in China.

China's current hospice evaluation research is biased towards a certain service content or a certain group, and the evaluation method is mainly to construct a small-scale index system or introduce international scales for Sinicization or homemade scales, so as to assess the level of quality of care. On the whole, the existing evaluation methods and contents of hospice care in China are generally limited to the evaluation of patients' comfort care and symptom control effects, and the evaluation dimensions are relatively single. Internationally, both evaluation index systems and scales are used to assess service quality, but they are more scientific and systematic in terms of the completeness of the indexes and the scope of application compared with China. Whether it is from the service demands of terminal patients or the development needs of hospice service quality, the evaluation of hospice service should be an all-round and multi-dimensional evaluation that includes social support and care, education and publicity, team communication and collaboration, and others. A WHO study in 2021 emphasized that service quality evaluation and improvement should be initiated as soon as a patient receives hospice service. In the context of the Chinese government's comprehensive promotion of hospice pilot hospitals, how to build a set of hospice comprehensive evaluation system applicable to local healthcare system is the urgent need for the development of hospice care.

In order to conduct a more in-depth study and understanding of the difficulties and bottlenecks encountered by pilot hospitals in their development process, the Chinese government issued another notice on the pilot work of hospice care in 2019, and in 2021, carefully formulated the National hospice care pilot work evaluation form. The core objective of this evaluation form is to comprehensively and objectively evaluate the quality and effectiveness of the pilot work of hospice care, in order to accurately identify and sort out the key issues that constrain its development. Through this scientific analysis method, the aim is to provide strong data support and decision-making basis for pilot work, thereby promoting the development of hospice care services towards higher quality, more balanced, and more standardized directions. In this context, the evaluation indicators for the construction of the national hospice care pilot work evaluation system, service norms and standards, and exploration of hospice care service system guarantees in these three key areas have reached a significant 58% of the total score, highlighting the government's high attention and expectations in these areas.Analyzing the development of China's hospice pilot hospitals, it is not difficult to find that under the government's macro-control, the improvement of hospice service level lacks internal driving force. How to activate the internal drive to provide hospice service in pilot hospitals? A comprehensive evaluation index system for hospice service can be used as a theoretical tool to objectively and quantitatively evaluate the quality and effectiveness of hospice service in pilot hospitals, and provide a scientific measurement tool for quantitatively assessing and comparing the quality and effectiveness of hospice service between different pilot units and different regions (Zhang et al., 2023).

2.4.3 Summary

In the field of hospice service, the lack of specialized evaluation tools and standards for service quality can have a negative impact on the quality of patient care. In order to address the gap in this research field, domestic scholars have actively introduced and systematically evaluated international evaluation indicators for the quality of hospice care services. On the basis of drawing on international experience and combining with China's national conditions and actual needs, scholars are committed to introducing and localizing mature scales from abroad, in order to build a quality assessment tool for hospice care services that not only conforms to China's cultural background but also meets practical needs. However, the scientific and generalizability of these tools in practical applications still need to be rigorously tested for reliability and validity, as well as validated through large-scale clinical studies. Only through such a research process can we ensure that the constructed quality assessment tool for hospice care is scientific and practical, thereby providing strong support for the development of hospice care in China.

At this stage, there is a large uncertainty in the quality of hospice service in Chinese public hospitals due to many reasons such as lack of public awareness of hospice care, imperfect policies, and lack of professional teams. While existing studies have improved the methods and approaches for assessing the content of hospice service at the micro level, the comprehensive assessment of hospice service at the meso-level for pilot hospitals and other organizations is still in the initial stage of development. It is worth noting that the Chinese government issued policy notices on service evaluation for pilot hospitals in 2017, 2019, and 2021, and the National Institute for Health and Care Excellence published a guide in 2019 with recommendations for 12 structural-level indicators. This means that the evaluation indicators at the structural level are being further improved.

In view of this, this study considers that the construction of a hospice service quality evaluation index system for meso-level evaluation is an important vehicle for optimizing the hospice service management model. In turn, a scientific management mechanism for assessment, implementation, evaluation, and quality control can be formed to promote the gradual standardization and normalization of hospice service.

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Chapter 3: Qualitative Research on the Service Needs of Hospice Stakeholders in Public Hospitals

3.1 Stakeholder definition and classification

3.1.1 Stakeholder identification

Based on the definition of hospice care service members by previous researchers (Shi et al., 2022), this study identified hospice care service stakeholders for advanced cancer patients in public hospitals according to the principle of ‘rights, responsibilities and interests’ orientation differences under the paradigm of management analysis, and the identification results are shown in the Annex B.

The scoring method proposed by the American scholar Mitchell has widely promoted the study of stakeholder theory and the application of this theory in organizational management due to its clear logic and operability. In Mitchell's academic research, two central points of inquiry have been raised with regard to organizational stakeholder identification: first, the need to clearly define which individuals or groups constitute an organization's stakeholders; and second, the question of why managers are concerned about particular stakeholder groups (Mitchell et al., 1997). Based on this, Mitchell proposes an assessment framework that scores potential stakeholders on three dimensions: legitimacy, power, and urgency. Through this assessment, the importance of a stakeholder can be quantified and the resulting score can be used to determine whether a stakeholder is a core stakeholder of the organization. This scoring mechanism not only provides a systematic means of identification, but also helps managers to more clearly identify and prioritize those stakeholders that have a significant impact on the organization in the decision-making process. This study is based on the research results related to the scoring method, combined with the Delphi method, to further extract the stakeholders and determine their attribute classification.

3.1.1.1 Basic information on experts

In this study, 24 experts in hospice service and managers of public hospitals were selected to design the Expert Consultation Rubric for Stakeholders of Hospice service in Public Hospitals (Annex C), and applying a five-point Likert scale, the experts were invited to examine, on the basis of their own work experience, the issues of entitlement (whether or not a certain group of stakeholders possesses the status, ability, and means to influence the quality of hospice service), Legitimacy (whether a stakeholder group's demands for participation in or solicitation of hospice service are in accordance with legal and moral requirements), and Urgency (whether a stakeholder group's demands can be brought to the immediate attention of hospice-related administrators) on a 5-point scale. A score of 5 indicates the strongest level of entitlement, legality, or urgency, followed by a score of 4, and a score of 1 indicates the weakest level of entitlement, legality, or urgency.

The experts who participated in this consultation have an average of more than 6 years of working experience or 3 years or more in hospice service, and have rich practical experience. A total of 20 evaluation forms for this expert consultation were eventually recovered, and the experts are shown in the following Table 3.1.

Table 3.1 Basic information of experts

Sports event	Categorization	Quorum	Sports event	Categorization	Quorum
Age	Less than 35 years	6	Title	Junior ranking	2
	35-45 years	12		Middle level (in a hierarchy)	6
	Greater than 45 years	2		Deputy high ranking	9
Distinguishing between the sexes	Male	8		High level	3
	Women	12			
Academic qualifications	Undergraduate (adjective)	2	Area of expertise	Hospice	3
	Bachelor's degree	10		Medical social work	3
	Doctoral	8		Medical oncology	5
Working experience	Less than 10 years	7		Medical management	3
	10-20 years	12		Nursing education	4
	Greater than 20 years	1		Psychology	2

3.1.1.2 Degree of Expert Activism

In the application of the Delphi method, the authority of an expert's opinion is an important indicator for assessing his or her contribution. In order to quantify the degree of authority of experts, the concept of authority coefficient (*Cr*) is introduced. The calculation of this coefficient is based on the basis of the expert's judgment of the stakeholders (*Ca*) and his/her familiarity with the relevant domain (*Cs*). Specifically, the authority coefficient *Cr* is calculated as $Cr = (Ca + Cs) / 2$. Where *Ca* reflects the expert's judgment of the importance of the stakeholders, and *Cs* reflects the expert's familiarity with the relevant topic. The combination of these two parameters is intended to provide a comprehensive assessment of an expert's authority in his or her area of expertise. According to the criteria set, when the *Cr* value is greater than or equal to 0.7, the expert can be considered to have a high degree of authority. This means that the expert's opinions and judgments within his or her field of expertise have a high degree of credibility and influence. Therefore, in the practice of Delphi method, the calculation and assessment of *Cr* value is of great significance in ensuring the quality of expert opinion and the effectiveness of the decision-making process. In this way, the scientific and rationality of decision-making can be improved, thereby promoting more informed and effective decision-making.

Expert judgement of whether a person is a stakeholder in hospice care for patients with advanced cancer in public hospitals was based on *Ca*: practical experience 0.8, theoretical analysis 0.6, peer knowledge 0.4, and intuition 0.2. Given that the experts invited to this meeting were all participants in the practice of hospice care and were asked to make judgments based on their own experience, the expert judgment basis *Ca* is 0.8.

Expert familiarity with hospice care in public hospitals was assigned values of 1.0 for very familiar, 0.75 for familiar, 0.50 for average, 0.25 for less familiar, and 0.0 for very unfamiliar. Statistically, there were 6 experts who were very familiar, 10 experts who were familiar, and 4 experts who were generally familiar, giving a value of 0.76 for expert familiarity *Cs*.

Converted by the formula, the degree of authority *Cr* of the experts in this correspondence is 0.78, and the authority coefficient *Cr* of the 20 experts' judgement according to the results of the Delphi method study is 0.78 > 0.7, so the results of the consultation are reliable. As shown in Table 3.2.

Table 3.2 Level of expert activism

In turn	Number of questionnaires issued	Number of questionnaires returned	Effective recovery rate	Expert advice on rates
1	24	23	95.8 %	54.2 %
2	23	20	87 %	15%
3	20	20	100%	10%

3.1.1.3 Degree of expert authority

According to the Delphi method, the degree of authority of the expert is expressed by the authority coefficient *Cr*, which is mainly calculated through the expert's judgement basis *Ca* and the degree of familiarity Cs of the stakeholders, and the calculation formula is as follows: $Cr=(Ca+Cs)/2$, the bigger the value of *Cr* is, the higher the degree of authority of the expert is, and when the value of *Cr* is $\geqslant 0.7$, it indicates that the expert's degree of authority is high.

Expert judgement of whether a person is a stakeholder in hospice care for patients with advanced cancer in public hospitals was based on *Ca*: practical experience 0.8, theoretical analysis 0.6, peer knowledge 0.4, and intuition 0.2. Given that the experts invited to this meeting were all participants in the practice of hospice care and were asked to make judgments based on their own experience, the expert judgment basis *Ca* is 0.8.

Expert familiarity with hospice care in public hospitals was assigned values of 1.0 for very familiar, 0.75 for familiar, 0.50 for average, 0.25 for less familiar, and 0.0 for very unfamiliar. Statistically, there were 6 experts who were very familiar, 10 experts who were familiar, and 4 experts who were generally familiar, giving a value of 0.76 for expert familiarity *Cs*.

Converted by the formula, the degree of authority *Cr* of the experts in this correspondence is 0.78, and the authority coefficient *Cr* of the 20 experts' judgement according to the results of the Delphi method study is $0.78 > 0.7$, so the results of the consultation are reliable.

3.1.1.4 Degree of harmonization of expert advice

Regarding the judgement of the stakeholders involved in the development of hospice care services for patients with advanced cancer in public hospitals, expert opinions were statistically analyzed to be relatively consistent. The degree of harmonization of expert opinions refers to whether there is disagreement on the indicator among the experts who participated in the correspondence, which is usually expressed by the coefficient of variation (*CV*) and Kendall's harmonization coefficient (*W*). When the coefficient of variation $CV < 0.25$, it indicates that the degree of coordination of expert opinions on the indicator is within an acceptable range. The Kendall's Coefficient of Concordance (*W*) value ranges from 0 to 1, and the closer it is to 1, the higher the degree of coordination of expert opinions.

After three rounds of expert consultation, according to the assignment conversion formula, the degree of coordination of the expert opinions of each stakeholder in the three dimensions of rights, legality, and urgency: the Kendall's Coordination Coefficient (*W)* in the dimension of rights is 0.781, the Kendall's Coordination Coefficient (*W)* in the dimension of legality is 0.77, and the Kendall's Coordination Coefficient (*W*) in the dimension of urgency is 0.814, which indicates that the experts' opinions are basically convergent. According to the results of the expert consultation and its recommendations, the *CV* values of the two indicators of banks and pastors were greater than 0.25, and the research group removed them from the indicator system. The final expert correspondence results are shown in Table 3.3.

Table 3.3 3D scoring results of hospice care services for advanced cancer patients

Stakeholder	Rights-based	Legality	Urgency	Average value
Patients	4.05	4.75	4.75	4.52
Dependents	4.45	4.60	4.60	4.55
Peer group	2.25	1.75	2.05	2.02
Nursing staff	4.7	5.00	4.35	4.68
Hospital administrators	4.6	4.80	4.4	4.60
Government function	3.25	4.35	3.85	3.82
Social service organizations	2.8	3.45	2.75	3.00
Universities/research institutes	3.1	3.95	1.95	3.00
Voluntary organizations	1.8	2.25	2.25	2.10
Caseworker	3.65	4.25	4.15	4.02
Community hospitals	2.65	4.4	2.5	3.18
Media, esp. News media	1.85	2.4	2.05	2.10
Foundation	1.6	2.55	1.5	1.88
Online crowdfunding platform	1	1.05	1.1	1.05
Charitable foundation	1.15	2	1.05	1.40
Commercial insurance	2.75	3.75	2.55	3.02
Psychological counsellor	2.5	3.3	2.2	2.67
Physiotherapists	1.5	3.3	2.9	2.57
Dietitians	4.05	4.75	4.75	4.52

3.1.2 Classification of stakeholders

3.1.2.1 Analysis of the entitlement dimension

According to the results of the analysis of the experts' scores, the stakeholders of hospice service for patients with advanced cancer in public hospitals with power scores of 4 and above are hospital administrators, caregivers, family members, and patients, which indicates that they have a high degree of decision-making power and influence on the quality of hospice service, as agreed by the experts. Stakeholders with power scores of 3 or above and below 4 were government functionaries, social workers, and social agencies, indicating that they have some influence on the quality of hospice service, while stakeholders with power scores of 3 and below indicated that there are limitations to their influence in the development of hospice service for patients with advanced cancer in public hospitals and that they play a supportive role.

3.1.2.2 Legitimacy dimension analysis

According to the results of the analysis of the experts' scores, the stakeholders of hospice service for patients with advanced cancer in public hospitals with a legitimacy score of 4 or above are hospital administrators, nursing staff, family members, patients, government departments, social workers, and community hospitals, which indicates that the experts unanimously believe that their participation in the development of hospice service has a stronger legitimacy and is supported by effective laws, and that, accordingly, there is a stronger legitimacy in claiming the benefits of the development of hospice service. Stakeholders with legitimacy scores of 3 or more and less than 4 were social service organizations, dietitian rehabilitators, psychological consultant, and universities/research institutes, indicating that their legitimacy in claiming benefits from hospice service was in the middle of the scale. Stakeholders with power scores of 3 and below indicate that there are legal and ethical constraints to claiming the benefits they need from hospice service for patients with advanced cancer in public hospitals.

3.1.2.3 Analysis of the urgency dimension

According to the results of the analysis of the experts' scores, the stakeholders of hospice service for advanced cancer patients in public hospitals with urgency scores of 4 and above are hospital administrators, nursing staff, family members, patients, social workers, and the media, indicating that the experts agree that there is a high degree of closeness between their interests and the quality of hospice service. Stakeholders with urgency scores of 3 or above and below 4 were social service organizations, governmental departments, universities/ research institutes, indicating a certain degree of closeness between their interest claims and hospice service quality. For stakeholders with power scores of 3 and below, this indicates that their interests are not given enough attention in the current stage of hospice service.

3.1.2.4 Stakeholder classification results

Based on the results of the three-dimensional analyses of entitlement, legitimacy, and urgency, this study draws on Mitchell's classification logic to classify hospice stakeholders and their characteristic attributes of advanced cancer patients in public hospitals. Based on the results of stakeholder support and three-dimensional scores, chaplains and banks were deleted as hospice stakeholders, and combined with the actual development of hospice care in public hospitals, chaplains belong to the religious community, and there is currently a lack of support for relevant regulations for religious activities in public hospitals. The classification results are shown in the Table 3.4.

Table 3.4 Classification of stakeholders of hospice service in public hospitals

Type of stakeholder	Basis of division	Stakeholder
Primary Stakeholders	Scores of 4 and above on at least three dimensions	Patients, families, caregivers, hospital administrators
Prospective Stakeholders	Score 3 and above on at least two dimensions	Government departments, social workers, social service organizations, universities/research institutes
Potential Stakeholders	Score below 3 on at least two dimensions	Community hospitals, media, associations, online crowdfunding platforms, charitable foundations, commercial insurance, psychological consultant, rehabilitators, dietitian voluntary groups, peer groups

3.2 Selection of research subjects

3.2.1 Selection of research subjects

Purposive sampling method was adopted in this study to determine the interviewees and the number of interviewees according to the selection criteria from March 2022 to June 2022. The selection of interview subjects follows two principles. That is, in the same category of research subjects, the people with greater variability in personal information were selected as interview subjects. The second is to determine the number of interviews in accordance with the principle of information saturation. Information saturation refers to the fact that it is no longer possible to extract more information related to the interview topic from what other interviewees in the same category have told us.

Based on the existing research criteria (Yang et al., 2016), the selection of patients was determined: for advanced cancer patients who were hospitalized in the Department of Oncology from March 2022 to June 2022, representative samples were selected according to the difference in information of patients' age, education, occupation and disease type. Inclusion criteria: ①Diagnosed as tumor by pathology and the disease is in stage III or IV, with a prognosis of survival≤6 months; ②Normal mental health, clear thinking, good communication and expression skills; ③Voluntary participation and signing of informed consent. Exclusion criteria: ①Speech and communication impairment; ②Cardinal Functional Status Score≤20; ③Choose traditional treatment service program.

In this study, after collating and completing the interview data of the 15th patient, there were no new themes emerging. In order to ensure the comprehensiveness and completeness of the information collected, two additional interviews were conducted to further validate the saturation of information while confirming data saturation. Through this rigorous methodology, this study aims to ensure the quality and depth of the data obtained, providing a solid foundation for subsequent analysis and conclusions.

After confirming that, again, no new themes emerged from these two interviews, we decided to discontinue further data collection. Finally, a total of 17 cases were collected. Patient numbers are denoted by the initial letter P of the English word patient, and basic information is shown in the Table 3.5.

Based on existing research criteria (Chen et al., 2008), clear inclusion and exclusion criteria were established for the selection of the family sample. Inclusion criteria included: ①being the primary caregiver of the advanced patient, devoting more than 8 hours a day to care for the patient, and caring for the patient for at least 5 days a week; ②acting as a decision maker in the family's healthcare decision-making; ③being receptive to the concept of hospice service; ④possessing effective communication and presentation skills; ⑤having a full understanding of the content of the study and voluntarily participating in the research process.

Corresponding exclusion criteria included: ①family members with unacceptable attitudes toward the concept of hospice service; ②significant communication barriers due to language differences; ③individuals with a lack of self-awareness and a rigid mindset that makes it difficult for them to communicate effectively.

In this study, after collating and completing the interview data from the 6th patient's family member, no new themes had emerged, and in order to ensure the completeness of the data collection, 2 additional interviews were conducted on a saturated basis to ascertain that no new themes had emerged, and data collection was discontinued, with a total of 8 cases collected. Patient family numbers are indicated by the initial letter S of the English word spouse. Specific information is presented in the Table 3.6.

Table 3.5 Basic information of advanced cancer patients

Serial number	Sex	Age	Careers	Religious belief	Marital status	Educational attainment	Types of cancer	Duration of diagnosis
P1	Female	73	Solicitors	Christianity	Married	Congrats! (on passing an exam)	Pancreatic	8 years
P2	Female	68	University teacher	Non-religious	Widowed	Undergraduate (adjective)	Pancreatic	4 years
P3	Male	57	Public transport group	Non-religious	Married	Congrats! (on passing an exam)	Lymphoma	5 years
P4	Male	53	Work	Non-religious	Married	Secondary schools	Nasopharyngeal carcinoma npc (medical)	1 year
P5	Male	34	In business	Christianity	Married	Junior high school	Glioma	2 years
P6	Female	72	Surgeon	Non-religious	Married	Undergraduate (adjective)	Thymic cancer	6 years
P7	Male	21	Schoolchildren	Non-religious	Unmarried	Undergraduate student	Synovial sarcoma	0.5 years
P8	Female	29	Profession	Non-religious	Unmarried	Branch (of medicine)	Gastric cancer	1 year
P9	Female	34	In business	Christianity	Married	Undergraduate (adjective)	Leukaemia	3 years
P10	Male	47	Accountants	Non-religious	Married	Undergraduate (adjective)	Esophageal cancer	1 year
P11	Female	31	Beauticians	Non-religious	Unmarried	Undergraduate (adjective)	Leukaemia	5 years
P12	Female	41	HR	Non-religious	Divorcee	Congrats (on passing an exam)	Nasopharyngeal carcinoma npc (medical)	7 years
P13	Male	32	Sales (representative, agreement and others)	Non-religious	Married	Branch (of medicine)	Gastric cancer	half a year
P14	Female	65	Profession	Christianity	Married	Secondary schools	Rectum	2 years
P15	Female	33	Trainer	Non-religious	Unmarried	Undergraduate (adjective)	Gastric cancer	3 years
P16	Female	59	In business	Buddhist	Married	Junior high school	Lung cancer	4 years
P17	Male	45	Designer	Non-religious	Married	Undergraduate (adjective)	Liver cancer	1 year

Table 3.6 Basic information about primary caregivers

Primary caregiver						Patient		
Serial number	Relationship with patients	Distinguishing between the sexes	(A person's) age	Educational attainment	Careers	Serial number	(A person's) age	Diagnosis
S1	Mother-daughter	Female	38	Bachelor's degree	Principals	P2	68	Pancreatic
S2	Mate	Female	54	Junior high school	Profession	P3	57	Lymphoma
S3	Mate	Female	48	Secondary schools	Work	P4	53	Nasopharyngeal carcinoma npc (medical)
S4	Mate	Female	49	Secondary schools	Peasants	P5	54	Glioma
S5	Father-son	Male	48	Congrats! (on passing an exam)	Treasurer-accountant	P7	21	Synovial sarcoma
S6	Mate	Female	31	Undergraduate (adjective)	Primary school teachers	P9	34	Leukaemia
S7	Mate	Male	67	Secondary schools	Profession	P14	65	Rectum
S8	Mate	Female	44	Undergraduate (adjective)	Financial	P10	47	Esophageal cancer

Based on the existing research criteria (Zhao et al., 2022), the healthcare service support personnel were identified as: ① Familiar with the concept of hospice service and its specific service content; ②Having two or more years of experience in providing supportive services to patients with advanced cancer; ③Currently engaged in the work related to hospice service; ④ Being informed of the study content and voluntarily participating in it; ⑤High motivation to participate in this study. Exclusion criteria: ①Lack of recognition of the value of hospice service; ②Not engaged in hospice service related work.

Subject to objective conditions, the number of non-patient and family members interviewed was based on meeting the inclusion criteria, and the numbering was based on the first letter of the corresponding English word. A total of five oncology caregivers (Nurse, N), two hospital administrators (Managers, M), two health and wellness committee supervisors (administrator, A), one rehabilitator (Rehabilitator, R), and 1 dietitian (Dietitian, D). As shown in Table 3.7.

Table 3.7 Basic information of medical service personnel

Serial number	Age	Sex	Title	A job	Working experience
N1	29	Female	Physiotherapists	Nursing department	5 years
N2	36	Female	Nurse practitioner-in-charge	Haematology & oncology	10 years
N3	38	Female	Nurse practitioner-in-charge	Gastroenterology	12 years
N4	28	Male	Physiotherapists	Radiotherapy clinic	5 years
N5	29	Female	Physiotherapists	Nursing department	6 years
M1	47	Male	High level	Deputy chair of board	20 years
M2	43	Male	Lecture on	Head	17 years
A1	44	Male	Middle level (in a hierarchy)	Deputy director	11 years
A2	46	Female	Middle level (in a hierarchy)	Head	14 years
R1	35	Male	Junior ranking	Rehabilitation management	8 years
D1	33	Female	Middle level (in a hierarchy)	Dietitians	6 years

Based on existing research criteria (Tao et al., 2021), a total of non-medical service support staff were included based on whether or not they had been in hospice practice for two years.: five medical service volunteers (Volunteer, V), two counsellors (Counselor, C), one head of a public service organization (Leader, L), and two medical social workers (Social worker, W). As shown in Table 3.8.

Table 3.8 Basic information of non-medical service support staff

Serial number	Age	Sex	Title	A job	Working experience
V1	23	Male	Not have	Not have	Not have
V2	19	Female	Not have	Not have	Not have
V3	22	Female	Not have	Not have	Not have
V4	19	Female	Not have	Not have	Not have
V5	21	Male	Not have	Not have	Not have
C1	32	Male	Tutors	Principals	6 years
C2	39	Female	Lecture on	Principals	13 years
L1	35	Male	Not have	Project leader	9 years
W1	28	Female	Middle level (in a hierarchy)	Social work	2 years
W2	30	Female	Middle level (in a hierarchy)	Social work	3 years

3.2.2 Data collection and collation

First, the outline of the interviews was determined. According to the purpose of the study, based on the review of relevant literature, 2 oncologists, 4 oncology nurses, 2 hospital administrators, 3 patients, 2 family members, 1 head of a public welfare organization, 1 medical social worker, and 2 volunteers were consulted to summarize and analyze the needs of the interviewees, to formulate the relevant questions, and to initially determine the interview outlines after several discussions among the team members. An expert who has been engaged in hospice service for 9 years was invited to review the interview outline, and the outline was finalized based on the review suggestions. A detailed outline of the interview is Annex A. The semi-structured interviews broadly followed the interest-oriented interview guide:

①Clarify roles and understand the content of the interviewee's role in hospice service.

②To understand the interviewee's motivation and intrinsic drive to participate in hospice service, including attitudes and feelings about the development of hospice service.

③Uncovering the claims of interest and the game of interest between stakeholders in the development of hospice service.

④Analyzing the theoretical value of the stakeholder theory framework for the development of hospice service in public hospitals.

⑤Explore the importance of interest claims for stakeholder involvement in hospice service.

⑥Solicit feedback from interviewees on the ways and channels of claiming their interests.

Second, the collection of information. Due to the reality dilemma of cognitive differences and lack of trust in data collection from patients and their families, the researchers observed the living status of advanced cancer patients through daily observation and carried out daily communication and exchange with patients and their families to understand the relevant information of patients and their families and to gain the trust of patients and their families. During the interviews, the researchers encouraged the interviewees to fully express their true feelings and thoughts. During the interview, in addition to listening to the verbal content of the interviewees, the researchers also meticulously observed and recorded non-verbal information, such as changes in their expressions and body movements, in order to obtain more comprehensive data. To ensure the efficiency of the interviews and the experience of the interviewees, the researchers strictly controlled the length of the interviews to approximately 30 minutes. In order to follow up with in-depth analysis and validation of the information collected from the interviews, the researchers requested the interviewees to leave their contact information at the end of the interviews for further communication and confirmation if necessary.

Finally, the information was collated. After the interviews, the researcher transcribed the audio recordings of the interviews into text within 24 hours and collated the transcripts. The Colaizzi data analysis method was used to analyze the interview data and refine the thematic content (M. Liu, 2019).

Step 1: In-depth understanding of the information

The researcher needs to understand the information provided by the research participants in a comprehensive manner through repeated reading of the textual materials, combined with field observation notes. At this stage, the researcher should temporarily set aside personal preconceptions and develop a holistic perception of the research phenomenon with an open mind, avoiding premature thematic extraction or labeling of the information.

Step 2: Identify key statements

Review the content of the text word by word and sentence by sentence, and mark the key words and phrases that recur and are closely related to the research question.

Step 3: Construct units of meaning

The researcher constructs or codes frequently occurring ideas, but tries to be as objective as possible in the process, avoiding the influence of preconceived ideas. The construction of meaning units requires the researcher to use professional sensitivity and openness to synthesize from significant statements.

Step 4: Developing a Theme

The researcher needs to think and reflect deeply on all the meaning units and categorize them initially into different themes. The researcher's intuition plays a key role in this process. To ensure the accuracy of the findings, it is recommended that multiple researchers participate in this step together.

Step 5: Elaborate on the themes

For each of the initial themes developed in Step 4, in-depth definition and elaboration is required. In order to enhance the persuasiveness and specificity of the expositions, some representative expositions can be selected from the existing primary sources as supporting examples. This not only helps to clarify the specific content and boundaries of each theme, but also demonstrates the practical application and significance of the theme through actual cases, making the whole research process more rigorous and comprehensive.

Step 6: Determine the basic structure

The researcher needs to compare and analyze similar themes and their descriptions, identify and distill common ideas, and construct a concise and generalized coding phrase for each theme.

Step 7: Validate the findings

The researcher should provide feedback to the study participants on the resulting thematic structures to verify that they accurately reflect the participants' real experiences. If there are any biases or misunderstandings, the researcher needs to start the analysis again from the first step. Although this is the final step of the study, the researcher should make clear to the participants the point in time at which the initial results will be fed back to them at the beginning of the study so that their comments can be sought at the appropriate time. Table 3.9 is an example of open coding for some of the content:

Table 3.9 Codes (typical example)

Interview data	Open Codes	Selective Codes
“The company of family members is important for the elderly, and families should be made to realize this and spend more time with them, talking or taking care of them.”	Receive care and attention from family.	Emotional support
“Also, I think communication between patients is still quite important, I was in a bad mood and having their concern enabled me to adapt quickly at once.”	Being supported and cared for by others	
"We have a psychological team here, and we bring in specialized psychologists to counsel them."	Need professional emotional counseling	
"I can't stand the pain sometimes ah, just want the nurse to help me, as long as it can be painless, whatever."	Reducing the frequency and intensity of pain	Pain Control
"The patient doesn't tell us he's in pain, and we sometimes ignore ...... His reluctance to tell us may be due to a fear that the analgesics will be addictive."	Patient pain symptoms are difficult to detect	
"Mild pain is tolerable, but severe pain is unbearable, and it would be nice to have early analgesia before the severe pain kicks in."	Lack of effective interventions for pain	

After open coding the transcribed documents, the open codes were selectively coded to form the final thematic codes, namely, the service demand indicators, and the thematic codes were able to reflect the correlations between the different codes.

3.2.3 Quality control

Firstly, interviewing skills were mastered. Before the interviews, two researchers were trained, and the focus of the training included how to explain to the interviewees the content of the study and the purpose of the interviews, the characteristic precautions for different interviewees, and how to use language skills such as listening and active attention, as well as the application of body language such as sidestepping and eye-to-eye contact.

Second, determine the time and environment for the interview. In accordance with the principles of quiet, comfortable, private, and convenient for the interview subject to choose a suitable interview place, as far as possible, let the interview take place in a relatively warm and comfortable environment. Regarding the selection of the interview time, in principle, avoid the time period when the patient is in poor physical condition and medical examination.

Then, objective recording was ensured. During the interview and in the analysis process, the researcher did not mix subjective judgments and fed back the summarized views to the interviewee after repeatedly listening to the recorded information to ensure the completeness and authenticity of the original record.

Finally, the principle of confidentiality is observed. Interview data were saved and patient information was anonymized to protect their privacy. The results were analyzed through expert guidance.

3.2.4 Ethical principles

Firstly, the right to informed consent of the interview subjects was guaranteed. This study was reviewed by the hospital ethics committee and permission was obtained from the relevant departments of the hospital. Interview subjects were clearly informed of the purpose, content, and use of the interviews before the interviews were conducted, and the interviews were conducted with the consent of the subjects to be recorded.

Secondly, there was a clear commitment to anonymize all interview data in a coded way, and a commitment that all interview information would be used only for the purposes of the study and research.

Third, the patients were respected for any ideas they had. Interviewees were clearly informed that they could terminate or withdraw at any time during the course of the study and during the interview, and that withdrawing and not participating in this study at any time would not be detrimental to them or their families.

3.3 Refinement of stakeholder interest claims

3.3.1 Symptom management

3.3.1.1 Symptom control

Cancer pain (referred to as cancer pain) is one of the more common symptoms in patients with intermediate and advanced malignant tumors (van den Beuken-van et al., 2007). When cancer pain is poorly controlled and the pain exceeds the patient's tolerance limit, pain relief is the patient's main interest (Song et al., 2014). Effective control of cancer pain is of great significance to clinical anti-tumor comprehensive treatment. Correct, timely and standardized cancer pain treatment can effectively improve the clinical symptoms of patients and enhance the quality of life at the end stage.

The control of other symptoms in patients with advanced tumors is also an important part of the care and treatment process that cannot be ignored. In addition to the prevalent pain symptoms, due to the metastasis of cancer cells and the impact of chemotherapy side effects, the various types of advanced cancer patients involved in the interviews have different degrees of gastrointestinal bleeding, malnutrition, fatigue, sleep disorders and other types of symptoms, and the decline in somatic function affects the patient's psychological state and mental state. Therefore, after a patient receives hospice service, the hospice team should learn from the family about the patient's condition, psychological status, economic status, family background, and others, and develop an individualized hospice plan based on the patient's physiological state to effectively deal with and control the patient's uncomfortable symptoms and meet the patient's physiological care needs (Hui et al., 2014).

In the terminal stage, comprehensive and efficient symptom assessment, as well as precise management, monitoring, and control measures, are important to ensure the dignity and comfort of patients at the end of life. Patients' quality of life at the end of life can be significantly enhanced by targeting responses to their interests specific to this stage, including but not limited to pain relief, psychological support, and respect for their right to autonomous decision-making (Zhuang, 2018). Therefore, how to comprehensively, systematically, and realistically assess and manage patients' physical and mental conditions has become an issue of concern in the process of hospice quality improvement. In the interviews, healthcare professionals mentioned that when carrying out daily work, in addition to choosing appropriate corresponding diagnosis and treatment program for patients, they also need to observe the effect of patients, make timely adjustments based on the dynamic assessment mechanism of symptoms, and deal with the emergence of adverse reactions in a timely manner, but it is difficult to do everything when the actual work is heavy. In order to achieve a more accurate assessment, multidisciplinary healthcare professionals such as oncologists, dietitians, pharmacists, and others. need to work closely together to conduct a comprehensive and reasonable assessment of the patient's pain level and somatic functional status, to further enhance the effectiveness of symptom management and control. Therefore, to carry out symptom assessment and management for patients with advanced tumors, it is necessary to adopt a prospective epidemiological survey method to track the changes in the symptoms of patients with advanced tumors, and to clearly observe the factors affecting the changes in the supportive care needs of patients with advanced tumors at different stages, so as to propose appropriate care interventions at different stages, thus improving the rate of patients' needs satisfaction and quality of life. As shown in Table 3.10.

Table 3.10 Analysis of interview data related to symptom control

Symptom control	Encoding
"I can't stand the pain sometimes ah, just want the nurse to help me, as long as it can be painless, whatever."P12	Pain control
"Mild pain is bearable, but severe pain is unbearable, and it would be nice to have early analgesia before the severe pain kicks in."S1	Pain control
"The patient doesn't tell us he's in pain, and we sometimes ignore. His reluctance to tell us may be due to a fear that the analgesic will be addictive."N3	Pain control
"The pain was killing me. How could I not control it? The pain seriously affects my sleep, I get less sleep every day, up to five or six hours a night, and I'm very sensitive to the adverse effects of chemotherapy drugs, I'm always nauseous, vomiting, I don't want to eat anything, and I don't have any energy."P15	Other symptom control
"I have encountered this kind of advanced lung cancer before without any chemotherapy working and my body couldn't carry it, including the management of pain, chronic constipation and poor appetite in the back, and hospice care has given some guidance accordingly and we have learnt a lot."P6	Other symptom control
"I met a patient with lung cancer who had a fever, I think it was a cancer fever, and it went up to 42° C. All kinds of antipyretics were used, but it just wouldn't come down, and then after he passed away, the temperature was still in the 40s all the time."N1	Other symptom control
"I think as a hospice nurse, you need to have rich clinical experience, because the condition of terminal patients changes quickly, and nurses must carefully and carefully observe the patient's condition changes and deal with them in a timely manner to prevent some unexpected things from happening."N2	Mechanisms for dynamic assessment of symptoms
"By the time you get to the advanced stages of cancer, you basically have pain, whether it's because of the disease itself or the side effects of the treatment, and some patients may have peripheral neuropathy from chemotherapy or osteoporosis in older people, which results in fractures. The assessment and	Mechanisms for dynamic assessment of symptoms

Symptom control	Encoding
management of pain is more important The. There will be some scales to assess that as well."N3	
"We had a terminal patient, a forty-five-year-old female patient with cervical cancer, extensive pelvic metastases, and it was particularly painful, and then I reported the patient's level of pain, the presentation of all of this to the doctors, and we dealt with it before the patient got much better."N3	Mechanisms for dynamic assessment of symptoms

3.3.1.2 Comfort care

The core purpose of hospice care is to provide comfort and dignity to terminally ill patients, significantly enhancing their quality of life by alleviating their physical pain and psychological stress. In the field of non-pharmacological treatments, a variety of therapies such as massage, interventional therapy, acupuncture, and music therapy are widely used. Among them, music therapy, as a special therapeutic tool, demonstrates the potential to effectively reduce the body's perception of pain by stimulating the auditory nerve center (Zhang, 2019). Li and Zhang (2019) have shown that music therapy can not only play a positive role in significantly improving patients' sleep quality, but also effectively alleviate their negative emotions, thereby enhancing their compliance with medication. These findings provide strong support for the importance of music therapy in a comprehensive treatment strategy and point to its potential value in promoting the overall recovery process of patients. Studies have proved that massage can alleviate the degree of physical and psychological discomfort of cancer patients, such as the relief of anxiety, pain, fatigue and nausea (Zhou, 2019). Traditional Chinese medicine therapies such as acupuncture and moxibustion mainly massage acupoints to reach the goal of controlling pain and promoting sleep. Some respondents mentioned that caregivers should introduce appropriate non-pharmacological treatments to patients to relieve different levels of physical discomfort according to their conditions.

Most patients with advanced tumors are in serious condition, and interview subjects repeatedly mentioned that they were experiencing various uncomfortable symptoms caused by severe cancer pain, complex complications, and organ failure. It is recommended that the hospice team select the best therapeutic care plan for the patient's possible symptoms, such as dyspnea care, pain control, gastrointestinal symptom control, nutritional support, insomnia supportive therapy, and pressure ulcer prevention, based on the principles of evidence-based care and with reference to relevant literature.

In the care of patients with advanced tumors, specialty care plays an indispensable role. For patients with end-stage malignant tumors commonly seen in clinical practice, they present special needs in terms of nutritional requirements and digestive adaptations of food due to their malignant state. When a patient's condition progresses to the point where he or she is unable to consume adequate nutrients through a normal diet, nutritional support through a nasogastric tube becomes an effective clinical intervention (Tan & He, 2018). In this process, nursing professionals need to meticulously assess the functional status of the patient's gastrointestinal tract and accurately adjust the temperature of the nutritional solution accordingly, as well as rationally utilize the nasogastric pump technology to alleviate the patient's digestive discomfort and improve the absorption efficiency of enteral nutrition. In terms of personalized assessment and support of patients' nutritional needs, nutrition experts should be invited to participate in consultations when necessary to develop targeted nutritional programs for patients. In addition, given that patients with advanced tumors are often accompanied by immunocompromise and malnutrition, which provides favorable conditions for bacterial growth, thereby increasing the risk of infection, which may lead to complications such as oral inflammation, mucosal rupture and bleeding. Therefore, caregivers must pay special attention to patients' oral care and take appropriate precautions and interventions to maintain their oral health. In terms of catheter care and safety management, detailed operating procedures and safety standards have been established in all healthcare organizations and their subordinate departments. The establishment and implementation of these regulations aim to ensure the quality and safety of catheter care and reduce potential nursing risks. Effective implementation of comfort care reflects not only the solid foundation of nursing staff in basic nursing knowledge and skills, but also their in-depth understanding of and precise adherence to the rules and regulations of their healthcare organizations and departments. This comprehensive nursing competency is essential to ensure that patients with advanced oncology receive high-quality comfort care, and is a key factor in enhancing patient care experience and satisfaction. As shown in Table 3.11.

Table 3.11 Analysis of interview data related to comfort care

Comfort care	Encoding
"My mother-in-law has difficulty going to the toilet, and the nurse came across her the other day and told me that when she went to the toilet, she would put a hot compress on her tummy to see if it worked. I can't say that this tip works, and my mother-in-law's appetite is much better after coming out of the toilet in the morning."S1	Nursing guidance
"I always wanted to ask the doctor what's wrong with me, what other tests do I need to do, what's the best treatment for me now, went to him twice, he's gone off to surgery, didn't even see him"P3	Nursing guidance
"The diarrhea was so bad after the injection that I was afraid to eat food like fruit."P8	Nursing guidance
"I wish there was someone to interface with the nurses and the families to solve the problem that we won't be able to care for."S3	Nursing guidance
" For example, relaxing music or massaging your hands and feet can promote sleep, as well as creating a good sleep environment, including lighting or sounds, and others."W1	Non-therapeutic hospice care
"Taking analgesics also costs money, it's a drug that is not good for the body,	Non-therapeutic

Comfort care	Encoding
analgesics are not good for the body, if you control the pain with non-pharmaceutical treatments such as Chinese medicine that would be the best."S5	hospice care
"Sometimes a family member massages me and it eases it a bit."P2	Non-therapeutic hospice care
"If the patient has a trocar needle or a gastrointestinal decompression tube, we should be aware of the care of this catheter so that it doesn't press or come out. Catheters should also be watched for infections. Older people are weaker and more prone to infections, and this is something you should be even more aware of."N2	Specialist nursing
"The most basic cleanliness is not to be ignored, cleanliness of the hair, mouth and skin, cleanliness not only makes the elderly comfortable and happy, it also makes them feel confident and self-respecting, while keeping them clean also prevents infections"N3	Specialist nursing
"Because many of the hospice patients are bedridden, it's important for him to have skin care."N2	Specialist nursing
" For patients with ascites, usually the doctor will puncture and release ascites for them according to the condition, and the patients will be much more comfortable, in fact, they can't lie down, we can help them to take a comfortable position, such as rocking the head of the bed high, if (because of) decreased digestive function we can teach the patients or help them to massage their abdomen clockwise, or applying manna will help."N4	Specialist nursing

3.3.1.3 Care support

Patients with advanced cancer are often in need of a long-term care process, and the more time the primary carer spends caring for the patient each day means the heavier the care burden. As the disease progresses, patients with terminal tumors may experience varying degrees of respiratory distress, stress injuries, gastrointestinal dysfunction, fever, and difficulty eating. The occurrence of many uncomfortable symptoms brings terminal patients and carers great psychological pressure, such as anxiety and panic. Regardless of the type of treatment received, the interviews revealed that the majority of patients and their families strongly expressed their desire to obtain information about their disease. They wanted to know more about the pathogenesis of cancer, the diagnostic process, existing and emerging treatments, and specifics and strategies for self-management. In addition, they want to be actively involved in the development of their care plan, rather than just being told the results or receiving fragmented information.

Patients' lack of knowledge about the disease and current medical technology, coupled with the difficulties they face in understanding and receiving information about treatment options, result in significant individual differences in the content and extent of information needs among patients. The inability to accurately predict disease progression and prognosis, as well as uncertainty due to a variety of complex treatments, often leaves patients feeling confused and helpless, which in turn creates a sense of uncertainty about their disease (Liu et al., 2013). This sense of uncertainty has a significant impact on patients' ability to regulate their psychological conditioning and adaptability, increasing their psychological stress during the course of the disease, which may ultimately have a negative impact on their treatment outcome and recovery process (Wang et al., 2018).

By providing patients with detailed information about their illnesses, we can help them build a comprehensive understanding of their illnesses, so that they can better coordinate with their treatment plans and increase their participation in the treatment process. During in-depth communication, patients and their families expressed a strong desire for healthcare professionals to provide them with knowledge about their disease, medications, nutrition, caregiving, and rehabilitation exercises. When patients' information needs were adequately met, they tended to cope with life's challenges more positively, satisfaction with healthcare services increased, and symptoms of anxiety and depression were expected to be alleviated. The results of the interviews showed that the avenues of publicity and education should be diversified to meet the needs of different patients. Care guidance for patients and their families should emphasize the innovation and diversity of forms. Utilizing online platforms can make the content of public education more in-depth and sustainable, such as through online training courses and social media platforms such as WeChat groups, to ensure that patients can truly understand and grasp the information delivered. Such an approach aims to inspire patients' confidence and courage in the face of cancer and stabilize their emotions so that they can better cooperate with treatment. Therefore, it is crucial to establish a model of health promotion and education that is holistic, staged and phased. Through this model, patients can be systematically provided with the health information they need to help alleviate the sense of uncertainty brought about by the disease, thereby producing a positive therapeutic effect.

Drug awareness and drug compliance in patients with advanced tumors interact with each other, and the level of drug awareness of patients in hospice care will directly affect their drug compliance and indirectly affect the incidence of complications and severe pain (Li & Li, 2008). The relationship between adherence, efficacy and adverse effects should be fully considered when selecting medications, and drug dosages need to be determined on an individualized basis, such as age, gender, weight, and others. A number of frontline healthcare professionals interviewed mentioned that some patients or family members lacked knowledge or had misconceptions related to scientific drug taking, which in turn led to patients reducing the dosage or stopping taking the drugs on their own, and it was very common to believe that the drugs were addictive or did not need to be taken according to the doctor's instructions due to good symptom control. In their interactions with oncology patients, medical staff should explain the necessity of medication for pain relief to patients and their families, help patients to improve their understanding of cancer pain medication, try to eliminate the fear of using pain medication, especially morphine narcotic drugs, and intervene in a timely manner for the emergence of adverse reactions. As shown in Table 3.12.

Table 3.12 Analysis of interview data related to care support

Care support	Encoding
"There are pain managers in big cities like Beijing and Shanghai, with full-time staff to guide the medication, and I feel assured when I take my medication this way."S5	Medicines management
"The pain is worse if you don't take your analgesics on time."P7	Medicines management
"She uses a kind of special medicine, I have run for several days with this medicine to go through the formalities, it is very complicated, and there are many places to sign, can you take it to the hospital national unified management, the patient is sick, and the drug has set up so many obstacles, it is very inconvenient."S7	Medicines management
"The doctor said when checking the room can be under the activity, this a move is still quite painful, how to move, there is no demonstration of the case, I'm afraid to give him a move injury."S7	Care guidance
"We used to think that people who are sick like me must have a big tonic, so my lover gives me chicken soup, fish soup, pigeon soup every day, but I can't eat anything that's so oily, and now I understand that, like us who are sick, the types of food must be varied, and in addition to eating meat, we also need to eat more vegetables and fruits."P17	Care guidance
"The doctor told me that I could do proper exercise after discharge, such as walking and playing tai chi, and the nurse told me that I could eat an egg a day for protein. These specific instructions made me feel that they cared about us patients, that I was comfortable during my hospital stay, and that I didn't have to worry about being discharged from the hospital."P13	Care guidance
"End-stage can be malnourished because the elderly may be less inclined to eat, and we should instruct them to choose foods that are high in nutrients, protein, and calories to maintain the daily intake of nutrients they need."D1	Care guidance
"Nurses explain the precautions are very detailed and specific, such as eating a light diet, you can eat some white porridge in the morning with some salted vegetables, a glass of milk every day, the best not to eat greasy, we patients want to know what to pay attention to the specific aspects of life."P13	Care guidance
"Sometimes when I see adverts for medicines on the internet that work exceptionally well, I ask the doctors and nurses about them, and they carefully explain that those medicines have not been tested in clinical trials, and that they are unreliable and not to be trusted, which is quite good, I think."S1	Access to information
"I can't tolerate pain the most, a little bit of pain, I take medication, but it takes a while to stop after taking the medication, is there any kind of preventive analgesic medication? In that case, I don't have to suffer from pain, but I also don't know if this long-term use of analgesics will affect my body?"P8	Access to information Access to information
"They never talked to us about the patient's symptoms and treatment information, nor did they provide us with knowledge about it"S2	Access to information
"I tried to find information about the disease and the medication in any way I could find it, such as by reading drug brochures, magazines, and watching TV, but I felt like I knew nothing"P7	Access to information
"I want to know how and where we should find out what's going on and how I can care for him at home without that"S8	Access to information
"There is no place where you can get specialized advice, the other day I had a stomach ache, I called the nurse's station and the nurse wasn't clear, and I couldn't find a doctor, and it was very inconvenient for us because we are from out of the country."S2	Access to information

3.3.2 Psycho-spiritual support

3.3.2.1 Psychological support

In order to achieve the goals of a dignified death and a comfortable end of life that are sought after in hospice care, it is crucial to provide comprehensive and detailed interventions for the physical and psychological conditions of the patient. Psychological distress, as a complex negative emotional experience caused by multiple factors, by its very nature contains not only changes in psychological dimensions, such as cognitive, behavioral, and emotional aspects, but also involves deeper impacts in social and spiritual dimensions. This profoundly distressing experience not only severely impedes patients' ability to adapt and cope with the disease, physical symptoms, and therapeutic measures, but may also have a negative effect on therapeutic outcomes. Therefore, in order to effectively alleviate patients' psychological suffering, multidimensional interventions including, but not limited to, psychological support, social support, and spiritual care are needed to comprehensively improve patients' quality of life and end-of-life experience (Perez-Cruz et al., 2019). Especially among advanced cancer patients, their ability to take care of themselves declines due to the gradual decline of physiological functions. Under the continuous torment of multiple diseases, many patients express anxiety, depression, loneliness, helplessness, irritability, fear, despair, and a deep sense of guilt towards their families. More seriously, some patients even experience psychological distress with suicidal tendencies (Chu et al., 2020; Robinson et al., 2015). Therefore, it is particularly important to pay attention to and intervene in the psychological dimension of patients in hospice care, which is the key to help them move towards a favorable death and a good end.

The interviewed doctors in the departments indicated that some psychological scales would be used for assessment in the treatment of patients with advanced tumors to assist in the diagnosis and assessment of the severity of psychological illnesses. The most common psychological reaction in cancer patients is depression, a negative emotional state that not only reduces the immune function of the body, making the immune system less efficient in recognizing and eliminating cancer cells, but also leads to a further decline in physiological functions of the individual. In addition, depression is often accompanied by loss of appetite and sleep disorders, posing a serious threat to the overall health of the individual (Zhang et al., 2012). Depression in patients with advanced tumors has varying degrees of adverse effects on treatment outcomes. During interviews, patients and healthcare providers mentioned a variety of negative effects, such as depression may exacerbate the condition, including promoting tumor recurrence, metastasis, and deterioration; decrease the patient's quality of life; lead to more frequent need for healthcare services and prolonged hospitalization; diminish the patient's comprehension of and adherence to treatment information; and ultimately, increase healthcare costs. Therefore, it is critical to manage the mental health of patients with advanced tumors, especially depression, to enhance overall treatment outcomes and quality of life. Interviews with the patient's primary caregiver mentioned several times that they were worried about the patient's state of mind, which shows that the patient's state has a great impact on the caregiver's state of mind.

How to adopt individualized psychological intervention, timely guidance and follow-up comfort according to the actual situation of patients to help them establish positive cognition and build a hopeful future is a topic worth discussing at present. Mindfulness therapy includes: meditation, mindfulness training, yoga, and others. By establishing a separation between self and events, emotions, and experiences, it enhances the individual's ability to positively cope with and regulate them, allowing patients to show higher psychological resilience and gradually improve the quality of life. When a person possesses a positive psychological quality, even when facing a poor external environment or encountering adversity in life, he or she is able to stimulate the inner, inherent great potential to effectively deal with challenges, and thus promote his or her own health and development (H. A. Wang & D. L. Wang et al., 2021). In clinical nursing practice, by cultivating patients to cope with problems with a positive mindset and focusing on the enhancement of their positive psychological qualities, the quality of life of patients can be significantly improved, and their mental health can be promoted at the same time. Therefore, emphasizing the cultivation of positive psychological quality is of great significance in clinical nursing.

As an effective peer-supportive health education method, mutual communication and exchange among peers has a positive impact on patients' values and behaviors. During the interviews of the qualitative study, we observed that many patients actively participated in sharing their personal experiences and deep feelings, aiming to help other patients understand death as a part of the life process more comprehensively. This model of communication based on mutual support not only promotes emotional support among patients, but also contributes to the reconstruction of their perceptions of the disease and the end of life, thus enhancing their health status and quality of life at the psychological level.

In other words, groups with similar life experiences and life experiences tend to be able to be positively guided by traditional values, whereas other groups may be less likely to be influenced to face the end of life with a peaceful mind. Medical social workers and directors of hospice service have noted that during the implementation of hospice service, depending on the specific situation of the patient and his or her family, peer support group activities are organized on a regular or occasional basis, with the aim of encouraging mutual support among patients and instructing family members on how to positively encourage and support the patient in order to improve the patient's pain management and depressive symptoms.

The power of institutionalization to build highly homogeneous interaction networks for patients, such as the establishment of patient groups within hospices, helps to prevent patients from being marginalized in their social relationship networks. Feedback on the effectiveness of the service showed that family members of patients with the same disease symptoms generally showed concern for other patients on the ward and often drew on their own experiences to encourage patients to actively fight their disease and value their lives. This peer-support based interaction model not only helps to enhance patients' mental health, but also provides an important addition to their family and social support networks. The results of the study by Shang et al. (2014) showed that when patients take the initiative to share their successful self-management experiences with other patients, they not only enhance their own motivation and enthusiasm to continue self-management, but also form a positive interaction and support network with their fellow patients. Through this mutual sharing and learning, both parties can continue to improve their respective self-management abilities. Therefore, peer education should be advocated to effectively improve patients' self-management ability by strengthening communication and exchange among patients. As shown in Table 3.13.

Table 3.13 Psychological support

Psychological support	Encoding
"Previously, our general hospitals focused on symptom control when treating patients with advanced cancer, and it is only in recent years that people have begun to realize the importance of psychological assessment."C1	Psychological assessment
"Now the psychological assessment system in general hospitals is not perfect. For example, there is no specialized mental health department, which is basically managed by neurology department."A1	Psychological assessment
"Now some families of patients will take the initiative to seek psychological evaluation and psychological intervention, which is kind of a social progress."N2	Psychological assessment
"It's really good to listen to you guys talk to me every time. I couldn't understand a lot of problems before, but now I can talk to you, and my spirit is much better than before."P4	Intervention
"We have a psychology team here and we invite specialized psychology teachers to give them psychological counseling."W2	Intervention
"We try to stifle the first signs when we find them, and when we can't, we still look to the psychiatric staff, or volunteers from patients who have had the condition before to come and talk to them."N2	Intervention
"We have counselling groups and will hold some activities. However, if we encounter patients with serious (psychological) problems, we may not know how to deal with them further (show of hands)."W1	Intervention
"There will be all-night long conversations with friends, and there will probably be	Peer support

Psychological support	Encoding
a lot to talk about. And it's just that I still want to have a conversation with my close friends one by one."P9	
"I think the activity room is really heartfelt. I've been there a few times, and found that communication between patients is still quite important. Sometimes when I was feeling bad, talking to them and having their concern might give me some support, and at least let me feel not alone."P4	Peer support
"We have a group where patients chat, and I will read some of the things they post, and ask questions if I don't understand something, which will be replied if someone has come across it. It makes me feel a little better that I'm not alone in this situation."S3	Peer support
"I feel a little more secure if the doctor could introduce a few patients with the same condition as mine to know each other and see how they are doing after treatment."P8	Peer support

3.3.2.2 Spiritual care

Spiritual support is a nursing practice guided by spiritual values that place special emphasis on recognition and respect for the concepts of human dignity, kindness, compassion, peace, gentleness, self-care, and care for others. The underlying aim is to assist patients in their journey through their illness to explore the meaning of life, realize personal values, build faith and trust, and develop the capacity to love and forgive. Through these endeavors, spiritual support aims to help patients bravely face the fear of death, ease the uncertainty and physical and mental discomfort of the treatment process, and ultimately achieve inner peace and harmony.

At the current stage, spiritual care in China is still in the early stages of development. According to interviews with healthcare professionals, the public has a limited understanding of spirituality and often confuses it with religious beliefs. This misunderstanding may lead caregivers to incorrectly believe that non-religious patients do not need spiritual care. However, the reality is that cancer patients' needs for meaning in life, self-esteem, hope, religious beliefs, and forgiveness are often very strong. They expect to find meaning and value in life in the face of pain and adversity, so that they can face their situation with a more courageous and resilient attitude (Li et al., 2017).

With the rapid development of hospice care around the world, death education has gradually been emphasized. However, in China, death education is still in the preliminary stage. The prevailing misconception in society that cancer is equivalent to death has a significant impact on the psychological state of patients, which may lead to negative emotions such as anxiety, fear and depression. It is frequently mentioned by different individuals in the interviews: witnessing the death of a patient in the ward or experiencing the death of a loved one due to cancer is a process of awakening the consciousness of one's own death for its self, and this intuitive fear of death is completely difficult to eliminate. Diagnosed with cancer, knowing that there is no hope for a cure, and faced with the fact that they are gradually moving towards death, patients think about how they are going to say goodbye to the world. However, interviewed caregivers indicated that almost most of the patients with advanced tumors had never actively expressed anything about the aftermath of death, because they did not know how to do so, and their families did not dare to mention it actively.

In hospice practice, systematic death education can effectively alleviate anxiety and depression, which in turn can have a positive impact on enhancing the quality of life for cancer patients. To achieve this goal, we need to rely on professionals who have a background in psychological training to conduct death education activities on a regular basis. These activities should be conducted from a deeper perspective of the meaning of life, delving into the value and diverse manifestations of life. When people are able to discover and understand the meaning of life, they will have a clearer sense of what their mission in life and their existence is worth. This is especially important for cancer patients, as it helps them to alleviate their inner sense of despair, transcend physical suffering, and ultimately achieve spiritual hospice. For example, as patients in hospice units are in the end stage of life, patients and their family caregivers are often confronted with the loss of a fellow patient. These real and vivid life stories provide valuable insights and lessons for other patients and families. They enable some family caregivers to accept more openly the fact that their patients are about to pass away, and in turn help their friends and relatives, especially their children, to face up to the patient's illness and death as the inevitable end of life. Through such experiences, people can gain a deeper understanding of the meaning and value of life and add more warmth and strength to the patient's hospice journey.

Dignity, at the heart of the human spirit, embodies the deep-seated need to be respected, a sense of worth and self-esteem. In hospice practice, dignity care, with its philosophy of whole-person care, is dedicated to ensuring that each deceased person receives a peaceful farewell while giving profound comfort to the living. However, for patients with advanced tumors, the loss of dignity becomes a problem that cannot be ignored, with an incidence of up to 64.4%, according to research (Song et al., 2018). The importance of dignity care is that it not only strengthens patients' sense of dignity, meaning of life, and sense of mission, but also stimulates their hope and desire to survive. Through this type of care, patients' negative emotions, such as anxiety and depression, are significantly alleviated, thus improving their quality of life (Guo, 2018). However, in actual healthcare settings, a glaring problem has been identified: although healthcare professionals believe they have provided adequate support, patients often feel that their needs are not being met. This deviation between support and needs reveals a serious gap in communication and understanding. Disagreements between family members and patients often arise in the course of daily care. For example, when a patient asks for "a favorite food", "a walk", or "no medication", family members often respond by saying When the patient asks for "a favorite food", "to go out for a walk" or "not to take medication", family members often reject them with reasons such as "this food is not good for you", "you can't be active" or "taking medication is the only way to get well quickly", and so on. These refusals, though made out of concern for the health of the patients, have inadvertently undermined their sense of dignity and lowered their quality of life in the terminal period. What is even more heartbreaking is that some patients, due to financial constraints and consideration for their children, choose to ignore their feelings and insist on playing their family and social roles even though they are facing tremendous cancer pain. Such selfless dedication and sacrifice undoubtedly further aggravate the loss of their dignity in the dying stage. Most feel that the cancerous wound has dragged their family members down, and that the roles they once played as mothers, fathers, grandfathers, and grandmothers have been forced to be lost, and that not being able to take care of their own children or grandchildren brings about a sense of frustration that can't be dissipated.

Zhu et al. (2015) found that the issue of "meaninglessness" experienced by patients with advanced cancer has received increasing attention in palliative medicine research. For these patients, maintaining and enhancing their sense of meaning in life has become a crucial spiritual need. It has been observed that even for cancer patients with similar symptoms, those with a higher sense of meaning tend to have a more positive mindset and enjoy a higher quality of life. Therefore, during hospice service, patients should be emphasized and helped to find and maintain meaning in their lives to enhance their overall living status. Encouraging patients to do what they can, such as dressing, changing fresh dressing for wounds, and doing light housework will help them to maintain a sense of normality, and manage their disease, and increase their sense of control over their disease. Patients are encouraged to talk to others, to redefine the rationalization of the illness and coping mechanisms with their own thoughts and perceptions, and to adapt and discover new roles. Patients iterate themselves from behavioral change, positive psycho-emotional adjustment to spiritual fulfilment in their new self-identity. From a broad spiritual perspective, the unity of body and mind is achieved, enhancing the sense of meaning in life. As shown in Table 3.14.

Table 3.14 Spiritual support

Spiritual Support	Encoding
"The most painful and regrettable thing is that for my own family, the responsibilities and duties that I should have fulfilled have not been done, but instead have added burdens and pressures. I am really sorry for them."P10	Spiritual needs assessment

Spiritual Support	Encoding
"My daughter bought a membership to the Himalaya App so I could listen to the sutras, making me feel more at peace with myself."P2	Spiritual needs assessment
"I having been resuscitated once before. Thank God for his blessings to help me fight the disease. So, we have the sunshine mentality to overcome it."P9	Spiritual needs assessment
" The religious patient may have a spiritual attachment to spiritual care, and he will be more likely to believe in those and be less afraid of death. But a lot of patients without religious beliefs will have a fear of death, which will be a little bit harder than those who have a religion. But we can look for other ways to help him find something to hold on to, and find inner peace for him."W2	Spiritual needs assessment
"My health is getting worse, and I can feel it myself. I've looked it up on the internet (crying). I feel so helpless, and that it's dark in front of me, for that I don't know who can help me. I don't want to die!"P11	Death education
"I actually know that I don't have much time left. My wish about how to spend my last days is simple - I want to return home together with my daughter and grandchildren once symptoms are in remission."P9	Death education
"Many patients in our department (medical oncology) are in the middle to late stages of life, and it is very difficult for people to be at peace with their deaths at the end of their lives. In the past seven to eight years of my work, I have only seen one patient who went to his death peacefully, while others were unable to face it calmly. N1	Death education
"It can be said to be relatively fearful. Because too many things have not been done, too many regrets are still there, have not yet seen through the life and death in society, and do not have deep insights into the understanding and perception of life and the pursuit of life and ideas. If life is a long-distance running, it's over as soon as it starts to speed up. In all, there is a fear of the pain before death. "P3	Death education
"I want to die with dignity and not to leave with syringes everywhere, on a ventilator, and then unable to speak."P1	Dignity and preservation of values
"While I'm awake, I'll consult with my doctor to know how my condition has changed, what the end of the disease will be. Maybe I'll write down what I can do and what decisions I want to make, and if not, I'll talk to my mum and dad about them in advance, and when that day does come, I'd like to follow my wishes."P1	Dignity and preservation of values
"Nowadays many situations are overmedicated, especially when he is dying it is irreversible. Most of the time when we ask it is the family's wishes, not the patients, and many times there is overmedication. The patient should be asked if he wants to be resuscitated or have some traumatic rescue, such as intubation."W1	Dignity and preservation of values
"I was particularly afraid of being a useless person, lying in a hospital bed, unable to do anything, and everyone having to put down their normal rhythm of life to look after me. That's when I feel most useless, and it's so boring."P5	Dignity and preservation of values
"With the damage to her external image and the unbearable symptoms from the ascites, she felt it was pointless to live like this and couldn't make it through the night, triggering suicidal thoughts."C2	Dignity and preservation of values

3.3.2.3 Narrative medicine

Narrative medicine enables the hospice care team to enter the patient's inner world, and make hospice care from passive to active by narrating stories, externalizing the problem, and moving from thin to thick, so as to achieve ideological resonance with the patient (Wang, 2023). Currently, narrative medicine has been widely used in cancer patients at home and abroad. The meaning of life is a key factor in ensuring mental health and quality of life. Individuals can find the goal and direction of life by thinking about the reason or purpose of their existence and then find the goal and direction of life, which is a protective buffer for cancer patients to alleviate depression, reduce the sense of despair and avoid accelerated death. Most patients are proactive in describing the cancer pain they experience and do so with the hope of gaining understanding and empathy from others. Patients are more likely to expect healthcare professionals to listen patiently to their pain experiences.

The family plays a crucial role in the "life course" and can be utilized as a constructive force in hospice care. Family life review in narrative therapy refers to allowing patients to recall, recount and review important life events, in order to examine and reshape the experience and meaning of life. Patients are able to find the value and significance of their own existence, which in turn stimulates their inner strength. This process not only helps to enhance patients' self-perception and sense of self-worth, but also significantly enhances their sense of dignity, making them more resilient and confident in the face of adversity. Each person has his or her own unique life experiences, and life review is an important way to help patients find the meaning and value of life. Life review, as a crucial spiritual care measure, plays an irreplaceable role in assisting patients to reinforce the positive experiences in their lives and to recognize their contributions to their families and society. Through positive psychological guidance, it helps patients affirm the meaning and value of their own lives. In the interviews, numerous clinical workers indicated that they have consciously incorporated narrative therapy approaches in their daily work, and through patient and careful guidance, they help patients gradually establish a mindset to correctly face negative events. This subtle influence helps to reduce the impact of negative events on patients' minds, which in turn inspires them to meet the various challenges of life with a more positive and optimistic attitude. This form of expression is more easily accepted by patients and fulfils their spiritual needs.

The social support system plays a crucial role in mitigating the relationship between psychological stress and illness. In order to effectively cope with the psychological stress faced by patients, it is necessary to make full use of family and social resources, mobilize support from all sources, and provide patients with the necessary emotional support (Yang et al., 2005). The family is the smallest unit of Chinese society and the core of the individual's social support system. A number of patients with weak family support said that they often miscommunicated with family members and complained about each other, and the outbreak of these negative emotions would aggravate physical discomfort. Some patients with strong family support noted that more time for companionship allows primary caregivers to better accept their emotional changes so that even if they encounter problems, they can communicate and handle them calmly. The subjective experience and feelings of these patients are better even at the end stage of life, and the harmonious family atmosphere prevents family members from being under prolonged physical and mental stress due to the heavy burden of caregiving. With the accumulation of disease knowledge, the improvement of caregiving skills and the strengthening of health awareness, family caregivers can clearly perceive their own growth and progress, and gain a deep sense of accomplishment from it. In the practice of hospice care, the interviewed caregivers deeply realized that: for those patients who are lonely and lack of family companionship, it is necessary to pay special attention to their psychological state and give them more emotional care and support; and for those patients who are introverted and poor in expression, it is more important to pay attention to their social support network, combining the subjective feelings of the patients with the feedback from their families, in order to provide a more comprehensive and caring care service.

It is necessary for the hospice team to receive training in narrative medicine. After passing the training and assessment team, members can use narrative care steps to encourage patients to explain their life stories in a neutral and empathetic manner, and to pay attention, understand, respond and reflect, and to discover the positive events and flashpoints in their lives. This will enhance the patients' knowledge of the disease, establish positive psychological defenses, improve the patients' negative emotions, and reduce the distress of symptom clusters, thus helping the patients to adapt to life after the disease and improve the quality of life (Wu, 2023). As shown in Table 3.15.

Table 3.15 Narrative medicine

Narrative medicine	Encoding
"After the cancer metastasized, I knew I was going to go. When I went to bed at night, I couldn't sleep, and things that happened in the past presented themselves in my mind like an open-air movie when I was a child. I wanted to talk about it but didn't have the chance to do so."P14	Life review
"In the country maybe because a lot of people don't have religion, you have to think about spiritual support something like that. The nurse may need to make the old men feel that they have lived a very meaningful life, not in vain. For example, since a person may not have achieved much on his own, but his children are very good, I may make him feel proud by talking about his children by taking pictures of him before and helping him look back on his life, and others, thereby leading him to the positive side."W2	Life review
"Before I leave, I still want to reflect and look back on the thirty or so years I've travelled through."P9	Life review
"We had done a lot of hospice care services before, but it had been confusing where the results were presented. Once a patient suggested that she wanted to write a memoir, but unfortunately was unable to do so, from which we found that creating a life record was a necessary thing."W2	Social support
"I am so thankful for the heart of the hospice care team and this life record has given me great comfort!"S8	Social support
"The combination of a life memoir and a wish list presents a patient's life and we are able to learn a lot from it, which is quite striking."V2	Social support

Narrative medicine	Encoding
"In our work, we may be in conversation with the elderly, talking about whether he still has any wishes that have not been fulfilled. When we learnt about this, if it can be fulfilled, we would try to help him to fulfil it, create some small surprises for him and fulfil some small wishes."V1	Social support
"Try to get the family to spend more time with them and interact more. Encourage the elderly person to interact more with their fellow patients on the ward and build new relationships."C1	Emotional support
"The company of family members is important to the elderly, which families should realize. Families should spend more time with them, talking or looking after them. W1	Emotional support
"Family support is also very important to end-stage patients. We had a patient in our department, because whose family is a bit difficult financially, his lover chattered in front of him all day long: his illness led to financial difficulties, heavy burden, and his son and daughter-in-law quarrels every day, and others, often instilling some negative energy in his mind."N5	Emotional support
"In terms of heart comfort, it's mainly the company of the family, like just wanting mum to be with them, or just wanting dad to be with them."N5	Emotional support
"The nurse speaks softly, patiently explains to us patients, is always smiling, and tries her best to do whatever you need, which make me feel very comfortable in the hospital."P13	Emotional support
"Emotional communication needs mainly focus on the expectation of receiving encouragement and care from the healthcare provider."V5	Emotional support

3.3.3 Service management

3.3.3.1 Teamwork

Communication and the transfer of information are the bridge for the benign development of the hospice service. Quality doctor-patient communication has an irreplaceable role in the medical process, which can effectively alleviate patients' fear and anxiety, enhance patients' satisfaction with the treatment program, and further strengthen their confidence in overcoming the disease. However, in the actual interviews, we found that despite the urgent need of cancer patients and their families to communicate with healthcare professionals, it is often difficult for clinical healthcare professionals to adequately meet this need of patients in terms of time due to their heavy daily workload and pressure. This situation increases the risk of disputes and conflicts between doctors and patients to a certain extent, especially when patients fail to achieve the expected treatment effect or feel dissatisfied in the process of medical treatment. Therefore, how to optimize doctor-patient communication and improve work efficiency, while ensuring that patients' needs are met, is an urgent problem in the current hospice service work. In the interviews with hospice service managers, it was mentioned that the establishment of communication mechanisms between the hospice team and patients creates a channel for constructive communication relationships, and that questions can be consulted and discussed in a timely manner, which strengthens mutual trust and contributes to the harmony of the patient-physician relationship, and provide patients with adequate information support and professional advice, which enables them to fully prepare for the treatment, to enhance their decision-making ability , and to be more co-operative with the medical services.

Health-care professionals have the obligation to inform patients of their condition, but they must also follow the ethical principle of "do no harm". So, the basic process of informing patients of their condition is that the doctor tells the family, and the family decides whether to inform the patient and when to do so. Out of respect for the patient's life ethics, the patient's right to know means that the patient has the right to receive all information from the healthcare provider about the diagnosis, treatment, and outcome of his or her illness (Jiang et al., 2019). However, the interviews revealed that this is difficult to grasp in the service process, as healthcare professionals are often faced with the possibility that truthfully informing patients of their illnesses may cause them to lose confidence in treatment or lead to adverse consequences, and that family members request concealment of their illnesses in order to alleviate the emotional stress of the terminally ill patient. In the local context, it is usually the family, not the patient, that has the right to know about major medical conditions and the right to make decisions about healthcare options, and healthcare workers are least able to intervene in the choices made by patients and their families by intervening in their personal values in the policy environment without legal and regulatory guidance and regulations.

During the treatment of patients with advanced cancer, patients often suffer from multiple symptoms at the same time, which requires nurses to take on the primary responsibility of managing patients' physical symptoms and providing basic nursing services in their daily work. However, hospice practice guidelines offer a more comprehensive requirement to focus not only on the patient's physical condition, but also on his or her psychological state and the emotional needs of family members, as well as to actively engage in death education activities.

This requirement emphasizes the need for hospice nurses to provide services that not only require a solid foundation in psychology and professional competence in death education, but also require sufficient time and resources to ensure the quality of humanistic care services. In reality, however, it is often difficult to fully realize the goals of hospice service by relying solely on the health care team. Healthcare workers commonly report that, in addition to feeling the limitations of their own expertise when dealing with the care needs of terminally ill patients, they often encounter the challenge of a lack of professional guidance when faced with complex situations. This situation may stem from a lack of support from an interdisciplinary team with clearly delineated responsibilities and close collaboration. Indeed, the role of multidisciplinary teams in enhancing hospice patients' quality of life has been shown to have significant effects in research (Chen et al., 2020). Given this, hospital administrators should learn from this experience and work to improve the organizational structure and role specifications of hospice multidisciplinary teams. Collaboration with internal and external psychology professionals, recruitment of volunteers, and support from public service organizations are some of the measures that can be taken to improve the composition of the hospice multidisciplinary team and to provide regular and systematic management of hospice service in order to better meet the diverse needs of hospice patients and their families. As shown in Table 3.16.

Table 3.16 Teamwork

Teamwork	Encoding
"I think it's really important to communicate effectively because you have to reach out to different departments, different patients, different departments, and you have to connect the various departments together."W1	Communication and coordination mechanisms
"I don't know how to communicate with patients and families on this topic. Some families are in pain and there's no better way to communicate with them than to say something comforting."V4	Communication and coordination mechanisms
"There's no reasonable way to communicate. Many times, without communication, there is no way to implement communication and coordination, especially with leaders, how dare we make demands."W1	Communication and coordination mechanisms
"Nurses in the department have also reflected to me that they seem helpless especially in the face of all the problems of late-stage patients and would like to have norms to guide them."M1	Service skills assessment
"In our work we often come across issues such as how to educate depressed patients about death, so often we feel overwhelmed by our lack of expertise."N4	Service skills assessment
"I don't know how to communicate with the patient on this topic, some of the family members are in pain and there is no better way to communicate with them than to say something comforting."N1	Service skills assessment
"Our department currently has volunteer involvement and probably lacks the involvement of a spiritual caregiver because hospice is something that needs to be done as a team, not just doctors and nurses, but also More people from a variety of fields, including social workers, spiritual care providers and pastors, are involved."W1	Service collaboration model
"The hospice model requires the responsible nurse to be fixed, so that the nurse can have a comprehensive understanding of the patient's dynamics, give personalized care, and solve the patient's problems, and (I) obviously feel that communication with the patient is smoother, and the patient's satisfaction with the nursing care has been significantly improved."N2	Service collaboration model
"The main issue is the time for everyone. Because the teachers on the consultation team don't do hospice care full time, they all find time to see patients on top of their own work and check-ins, so there's a time crunch."W1	Service collaboration model
"Hospice care has to involve multidisciplinary members such as doctors, nurses, psychotherapists, religious people, social workers, and volunteers, but at the moment our team is not up to the task."A1	Service collaboration model

3.3.3.2 Service guarantees

In the process of carrying out hospice service, there are certain pressures and challenges for medical care, family members, volunteers and other stakeholders, especially families of patients with advanced tumors who have to bear great pressure and are already overburdened. The intervention logic of a variety of third-party resources to provide services to help them mainly focuses on how to get out of the difficult life situation, coexist with the disease, and integrate into the renewed social circle. Weilman believes that the strength of social network support is determined by the size of the area covered by an individual's social support network, that is., the number of people in the social support network is directly proportional to the strength of support. The social supportive elements involved in the interview data were summarized into three areas: firstly, third-party support such as charitable foundations and online crowdfunding platforms reduced financial pressure for patients and their families. Secondly, the intervention of voluntary organizations provided life review and support for patients, and the recreational activities provided were good for relieving the mental pressure of patients and their families, as well as reducing the emotional burden of healthcare workers. Thirdly, the non-medical support services provided by universities and third-party organizations of public interest have reduced the workload of healthcare professionals in hospice service, especially the feedback and professional advice provided in service evaluation.

As the important place where care service takes place, the hospital's organizational structure, resource allocation, human resources, and the feasibility of service implementation all influence the process of care, and thus the final outcome of care. Organizational characteristics of the hospital (the presence of a comprehensive multidisciplinary team, specialized oncology committee, the organizational structure to deal with emergencies, and the presence of a dedicated cancer resource available, and whether it is attached to a medical school) all influence the level of quality of cancer care (Yan et al., 2019). The quality of care is likely to vary between different levels of hospitals, both in terms of hardware facilities and software (level of medical and nursing skills of doctors and nurses in the hospital, service attitude, and others), which causes the variation in the quality of caregiving.

Most interviewees expressed, to varying degrees, a desire to increase hospice-related training, improvement of departmental staffing, and further increase public awareness of hospice care. For example, in providing hospice service, nurses often face the pressures and challenges of a lack of professional knowledge and skills, a busy work schedule, and an overlay of negative emotions.

Several hospice caregivers reported feeling pain, sadness, depression, and anxiety in the face of emotional aspects of life and death, as well as a lack of effective self-soothing skills. Death competence refers to a series of responses produced by an individual when facing and dealing with death, including the skills used in the process of dealing with death and the methods used in adaptation, as well as the corresponding beliefs and attitudes (Zhao et al., 2020).

Negative emotions such as anxiety, frustration, and powerlessness abound when healthcare professionals are faced with uncontrollable end-stage symptoms and dying patients, which is not only negatively impacts the quality of care provided to patients, but also has a significant negative impact on the physical and mental condition of healthcare professionals. A lack of death coping skills directly affects the quality of hospice care and that good death coping skills can improve the quality of hospice care (L. H. Wang et al., 2021). Several nurses mentioned that they did not have a good understanding of what, when and how to conduct death education.

Therefore, specific and feasible hospice training program should be introduced to provide pre-service and on-the-job training for hospice healthcare workers and volunteer groups, and to set up death education and communication skills as the content of continuing education, specifically including life and death, freedom, relationship, loneliness, and meaning, and to explain and practice communication skills and dialogues with terminally-ill patients, and to provide corresponding written practice materials for use in order to guarantee that basic hospice knowledge is available upon entry into hospice positions.

The vast majority of the nurses who participated in the interviews in this study expressed a desire for more support from society and the hospital to help them work and live healthier lives. The study also showed that support among colleagues plays a greater role in influencing nurses, and that adequate social support at work can help reduce psychological stress and improve mental health. It is suggested that hospital administrators should establish a hospital culture that is conducive to the physical and mental well-being of nursing workers, and promote the improvement of hospice nurses' cognitive ability to cope with death, to enhance the professional competencies and response capabilities of healthcare providers when dealing with end-of-life patients is of paramount importance. By implementing these strategies, not only can the working environment and psychological well-being of nursing staff be significantly improved, but also patients can be provided with more professional and high-quality hospice service. This lays a solid foundation for the enhancement of the overall service quality and patient satisfaction of medical institutions.

According to the demand for the development of hospice service, in the process of carrying out hospice-related training, education and training in ethics, law, psychology, communication, sociology and other embodied humanistic knowledge should be increased to enhance the moral quality and humanistic concepts of the service-related personnel, so as to transform passive service requirements into conscious service behaviors, and the hospitals also provide various forms of practical activities in line with the education in this area, such as organizing The department regularly creates a relaxing environment and forms a supportive group approach based on psychological counsellors to provide psychological support and education for hospice nurses.

A comfortable environment contributes to the patient's condition and psychological stability. Ideal hospice wards need to be equipped with sofas, coffee tables, independent bathrooms, call devices, dining areas and other facilities, add nursing appliances and facilities, and comply with barrier-free design. Wards are comfortable and warmly appointed, with wall hangings, greenery, decorations, and others, and independent bathrooms equipped with handrails, emergency call devices, and toilets. In the interviews, some family members said that considering the heavy cleaning needs of care, they hoped to set up shower and bath rooms, mobile bath beds, and install bath bombs and other auxiliary tools. To effectively alleviate patients' psychological stress, team members can hang some exquisite decorative paintings on the ward walls to create a pleasant atmosphere. Additionally, writing warm wishes and encouragement cards is also an excellent method to make patients feel warmth and care. In creating and maintaining a high-quality rest environment, it is essential to ensure that nighttime ward rounds strictly adhere to the "four gentles" principle. This means that during their rounds, nurses should keep their steps light, speech soft, operations gentle, and door closing quiet. This not only allows the team members to timely grasp the changes in patients' conditions but also ensures that patients' sleep quality receives adequate attention and protection. Through these meticulous cares, a more comfortable and peaceful treatment environment can be created for patients. As shown in Table 3.17.

Table 3.17 Service guarantee

Service Guarantee	Encoding
"I think there's a great need for systematic training and I think it's necessary for both patients and families to receive death education, which will help patients and families to better accept the state they're in now and help ease the sadness they feel inside."N4	Training and education
"I think there should be training in various areas that will enable us to understand the real reasons why patients have this claim and then be able to deal with it."N5	Training and education
"For the career development of hospice nurses, it is important to do the basic clinical skills and theoretical knowledge first, then keep learning, and for me personally, I would like to develop towards teaching and management."N4	Training and education
"Set up a single room and add some music to soothe the patient and reduce panic and anxiety."C2	Hardware Facilities
"When people are at the end of life, a lot of patients just want to live a more comfortable life, so the wards in our department are made to look as much like being at home as possible, and patients can decorate as they like."M2	Hardware Facilities
"Some of the beds rented at the hospital for the night are not so good, and It is not convenient to rent a house or stay in a hotel outside. So, if the hospital can provide a little bit of outside accommodation, it would be good. The requirements are not too high, as long as there is a bed to live in. The main issue is that two people take turns to take care of, and it takes at least two hours from home. ."S3	Hardware Facilities
"We have weekly activities for patients and families, as well as a range of activities	Humanistic

Service Guarantee	Encoding
based on the needs of patients and families to celebrate birthdays and festivals with them, so that both patients and families can feel that we care for them."L1	care
"The atmosphere in our department is particularly good, and the relationship between doctors and nurses is particularly good, particularly harmonious. Even if the work is busy, it feels that we are all supporting each other, like a family and it'll be relaxing."W1	Humanistic care
"Lack of proper psychological counselling methods leaves it up to patients to regulate themselves, and it is up to time to adapt. There is a great need to organize regular sittings, talks and chats to ease the psychological pressure."M2	Humanistic care
"Humanistic care includes health promotion to patients. Sometimes patients ask questions, some of which I can't answer, some of which are not well answered, promoting me to learn more in this area, adding to my motivation in my work."V5	Humanistic care
"We do have volunteers coming to our unit sometimes, but I don't think it's coming enough, and I wish there was more social workers, volunteers, that's a third party that would step in and take on different roles to help the patients and the families, and they would be a little bit more receptive to it."M1	Third party support
"My family was financially strained because my son had liver cancer. An oncology social worker helped me to apply for a government grant to ease the financial pressure."S4	Third party support
"Patients with malignant tumors are showing a year-on-year increase, and people's demand for quality of life is growing. Healthcare resources are still far from adequate, and how they can be improved should attract the attention of the community."A1	Third party support

3.3.3.3 Service effectiveness evaluation

In contemporary clinical research in oncology, the assessment of the quality of life for cancer patients has become one of the key indicators. This assessment not only includes the survival rate and prognosis of patients but also profoundly reveals the state of their daily lives. In the field of hospice service, the quality of life of patients and their families is significantly affected by the quality of care they receive.

Assessment plays a crucial role in improving the service quality of hospice service for patients with malignant tumors. Having knowledge and skills related to quality assessment is the cornerstone of conducting effective care quality assessments. However, currently in the field of cancer hospice service, the lack of overall assessment indicators and tools prevents a comprehensive quantitative assessment of the quality of hospice service, thereby limiting the further development and quality improvement of cancer hospice service. The quality assessment tools for hospice service mainly rely on various assessment scales. However, nursing staff and other interviewees generally point out that there are two major challenges in the application of existing assessment tools. First, regarding the application of assessment tools, the existing assessment tools in Mainland China are based on foreign scales that have been translated into Chinese. This approach may be influenced by various factors such as foreign history, religion, culture, and medical standards, leading to a lack of complete adaptation to the actual situation in our country (Zhang & Hao, 2021). Second, in terms of selecting assessment tools, the existing hospice service quality tools have certain deficiencies, and there is a lack of professional guidance during their use.

Understanding the service experience of end-stage patients and their families receiving hospice care can measure and improve the level of hospice service. Satisfaction evaluation holds an important position in the quality assessment of hospice service. It not only serves as a key indicator to measure the level of hospice service but also deeply reveals the deficiencies and shortcomings in the service process. Through satisfaction evaluation, we can obtain valuable empirical evidence, providing a clear direction and strong support for further improving the quality of hospice service (Jin et al., 2019). On the one hand, it was found in the interviews that healthcare workers have a strong sense of value of participation in the development of hospice service, but their satisfaction with salary and benefits and career development is low. On the other hand, one of the core objectives of hospice service is to effectively manage patients' symptoms and enhance their comfort. To achieve this goal, service providers must keenly observe changes in patient symptoms and quickly take appropriate intervention measures. In addition, by organizing lectures and other activities, hospice service-related knowledge and information can be widely disseminated to patients and their families, enhancing their cognition and understanding. During the treatment process, promptly communicating key information such as the treatment plan, purpose, and possible side effects to the family not only allows them to gain a deeper understanding of the content and significance of hospice service work but also provides them with necessary emotional support and encouragement .Patient satisfaction evaluation system is the driving force of doctor-patient communication and the promotion of effective communication between hospice service personnel and patients. From the management point of view analysis, a complete set of hospital satisfaction evaluation, complaint and feedback system should be constructed through information technology to build a service quality feedback channel in order to optimize service quality.

Currently, hospice service records management is shifting from disease management to life records management, and a good service record of the whole process is the core part of the whole health management of advanced oncology patients. In response to the complex and diverse needs of hospice and service management, the traditional visit record can no longer meet the needs of hospice service development. Several interviewees mentioned that the current hospice service management is relatively fragmented, or it is a task to fulfill some service needs, and quality management needs standardized service standards and processes. In this regard, managers believe that the Problem Solving Intervention approach should be adopted to promote service management, and the whole process is summarized as the "ADAPT" problem solving process, which specifically refers to Attitude, Define, Alternatives, Predict, Try out and so on (Parker et al., 2012). Hansen et al. (2015) used a comprehensive "outcomes-based" hospice service profile system to provide an operational framework for ongoing hospice service based on the changing needs of patients and their families by linking service goals, service processes, and service outcomes. As shown in Table 3.18.

Table 3.18 Service effectiveness evaluation

Service effectiveness evaluation	Encoding
"Typically, we assess the functional aspects of the patient by using the KPS scale to get an idea of the overall physical condition, and we also assess the level of pain symptoms using the NRS scale. N 2	Professional assessment
"Assessing the quality of the whole service is usually done by professional supervisors, which basically includes service records, case studies, standardization of medical and nursing instructions, and others, and also includes the requirements to demand the service, expectations, and willingness of patients and their families. W2	Professional assessment
"Clinicians in the department do research labs that use certain cancer quality of life scales, which are sort of a more holistic assessment of the patient's physiology and psychology, and the quality of our health care services is reflected side by side through the results of the patient's quality of life assessment."M2	Professional assessment
"We currently focus on psychological assessment and pain assessment, and we don't use any specialized assessment tools for other symptoms, let alone say take any specific tool to assess the quality of care. This is because there is no suitable tool for a holistic assessment, which basically assesses a particular item.C1	Professional assessment
"The suggestion box is a way for patients to rate their satisfaction with our service, sort of an indicator of the quality assessment."M1	Satisfaction assessment
"We have thought about applying the Family Satisfaction Assessment Scale. On the one hand, other assessments have been done a little bit, scale assessment more often, patients and families will be a little resentment. On the other hand, there exists cultural differences. So, we test down, the opinion box is more in line with the Chinese way of expression than the scale."N2	Satisfaction assessment
"We have tried to use TheCareEvaluationScale2.0 before, and this scale has some reference value. Sometimes when we communicate with family members about their demands or dissatisfaction, they actually don't know how to express it, and they don't have any concrete concepts, so the application of the scale can play an auxiliary role, and more accurately quantify an indicator and evaluate it more comprehensively.M2	Satisfaction assessment
"Whenever I want to go to the doctor to ask about my condition, I often can't find anyone, and I think it would be better if there was a condition communication plan."S6	Satisfaction assessment
"Integration management needs to be taken seriously. Patient's hospital stay is relatively short, some chemotherapy patients are discharged in 2-3d, so it is very difficult for healthcare professionals to observe after discharge. Without the emphasis of integration management, it is simply not possible to observe the patient experiencing a change in taste."A2	Service file management
"It was a patient with advanced lung cancer. One day she had a fever and was treated with cooling but it didn't work well. I didn't expect him to pass away that night, and I felt sad (bowed my head) that I hadn't done a good job of observing this part of	Service file management

Service effectiveness evaluation	Encoding
my condition."N1	

3.4 Conclusion

3.4.1 Analyzing conflicts of interest in public hospital hospice service

Based on the above qualitative research analysis, this study cross-analyzes the interests related to symptom control, comfort care, care support, psychological support, spiritual care, narrative medicine, teamwork, service assurance, and service effectiveness evaluation based on the four major service groups, namely, patients, healthcare providers, non-healthcare providers, and healthcare administrators, which are described in the table Table3.19.

Table 3.19 Cross-cutting analysis of interests

	Patients	Healthcare Providers	Non-Healthcare Providers	Healthcare administrators
Symptom control	1. Pain control is not effective. 2. Understanding changes in physiologic symptoms and ways of coping.	1. Limited pain control. There are individual differences in the effectiveness of medications to control pain. 2. Imperfect requirements for mechanisms of dynamic assessment of symptoms.	1. Incorporating Chinese medicine into the standardized overall management of cancer pain. 2. The diversified needs of patients are difficult to be satisfied at the same time and need to be managed in a graded manner.	1. The administration of medications has more stringent requirements to follow clinical guidelines rather than individual patient needs. 2. The existing assessment of symptom management is still mainly based on the traditional way, and there is a lack of tools that can effectively carry out dynamic assessment. 3. Symptom control is difficult to meet the expectations of patients and their families.
Comfortable nursing	1. Knowledge of catheters and other types of related nursing information. 2. Non-therapeutic palliative methods	1. Management of refined nursing care. 2. Improvement of nursing skills and service standards.	1. Standards for comfort management. 2. Shortages in the supply of equipment and facilities for non-therapeutic care. 3. Rates for non-therapeutic medical service programs.	1. Gradually incorporate long-term care insurance, commercial medical insurance and other supplementary medical insurance. 2. Building a platform for training and exchange and cooperation.
Care support	1. Access to social assistance. 2. Nutritional support. 3. Answers and clarifications to questions related to the treatment program and the taking of medicines.	1. Time and number constraints, doctors tend to provide only information that is closely related to treatment. 2. The absence of dietary management mechanisms. 3. Relatively limited access to social resources and lack of diversified linking channels.	1. Information on the handling of emergencies. 2. Information about diseases and treatment. 3. Information on daily care, especially dietary guidance and financial assistance. 4. Information and education efforts that are not as effective as they should be.	1. Due to human resources and financial constraints, we are not yet able to provide appropriate supportive service measures for patients' post-discharge care needs. 2. Relying on the internet hospital, we will gradually establish online counseling services.
Psychological support	1. To understand methods of emotional self-	1. There are psychological problems such as depression, fear and	1. Psychological intervention skills need to be improved. In addressing the psychological problems of terminally ill	1. Providing psychological counseling to healthcare workers has the problem of ethical conflicts caused by the

	Patients	Healthcare Providers	Non-Healthcare Providers	Healthcare administrators
	management. 2. To acquire the ability to cope with psychological problems.	empathy fatigue. 2. The hospital psychological assessment system is not yet perfect.	patients and their families, we lack the skills to choose appropriate solutions based on their individual characteristics. 2. Psychological counseling lacks support from the national health insurance policy. The cost of counseling is high, which is difficult for most patients and their families to afford.	relationship between colleagues. 2. Hospitals have high audit requirements for introducing third-party psychological counseling agencies. 3. Opening nursing specialty clinics and personalized psychological counseling clinics 4. Linking psychological resources in universities.
Spiritual care	1. Social roles are replaced by the patient's role, loss of sense of worth, and compromised dignity. 2. Lack of ability to cope with death.	1. Neglect in terms of spiritual needs. 2. Lack of capacity for death education. 3. Limited support and assistance available from peers and superiors.	1. It is difficult to recognize and assess the spiritual needs of terminally ill patients. 2. Due to staffing and time constraints, we are only able to meet the spiritual dimension of the patient's needs to a limited extent. 3. Limited understanding of death and lack of adequate coping skills.	1. In the hospital's management system, psychiatric needs are the responsibility of the department of neurology. 2. Death education and dignity preservation, which are not within the hospital's scope of responsibility, fall under the humanitarian sphere and are difficult to standardize and manage at the executive level
Narrative medicine	1. The fear of death. 2. Distress over the meaning of personal values. 3. Dying wishes.	1. The ethical conflict of condition notification. 2. Inadequate death coping skills.	1. Communication skills with terminally ill patients. 2. The standardized management mechanism of vital records. 3. The existence of family members with greater psychological and mental stress not effectively relieved, affecting the level of emotional support for the patient.	1. Death education needs to be front-loaded, with medical schools responsible for professional guidance and education. 2. The public's perception of death needs to be guided by government departments as well as the media. 3. There are some limitations in the support of public hospitals for narrative medicine.
Teamwork	1. Communicate progress and participate in medical decision-making. 2. Constructing convenient	1. Improvement of communication skills, including aspects such as interacting with families. 2. Tense work atmosphere due to staffing shortages and frequent interruptions.	1. The sharing of information and the establishment of multi-party information interaction channels. 2. Barriers to communication. Including lack of communication opportunities, communication styles, preference for	1. Improvement of communication and coordination mechanisms. 2. Lack of professional guidance and supervision. 3. Interdisciplinary collaboration mechanisms, management systems, operational processes, and behavioral

	Patients	Healthcare Providers	Non-Healthcare Providers	Healthcare administrators
	channels for feedback on needs.		autonomy, insufficient information, selective communication targets, and language and culture. 3. Inadequate staffing for further improvement and optimization.	norms need to be gradually established and improved.
Service assurance	1. Guaranteeing the right to make informed decisions. 2. Improvements in the ward environment.	1. No mechanism has been developed for the selection, training and promotion of personnel. 2. Psychological pressure is excessive. 3. The current training system has significant deficiencies in strength, breadth and depth, and is unable to meet the demand for specialized and systematic hospice professional competency cultivation.	1. The incentive and reward mechanism has yet to be improved. 2. The public generally lacks education on the concept of life, and there is still bias in the understanding of the connotation of hospice care. 3. Support measures related to humanistic care are yet to be upgraded, including efficient and relaxing environment, humanistic care for medical and nursing staff as well as for patients and their families, and so on. 4. There are difficulties in the recruitment and management of volunteers and the payment of social worker fees.	1. High staff turnover, mostly part-time, and greater management challenges. 2. Insufficient safeguard policies, just the hospital level is difficult to effectively recommend relevant safeguard measures. 3. The standardization of management system needs to be refined and optimized according to the actual situation of hospice service. 4. Third-party service purchase faces financial difficulties.
Service effectiveness evaluation	1. Assess the information needs of patients and caregivers. 2. Satisfaction assessment	1. Assessment of service skills, including empathy, communication, and caregiving skills. 2. Assessment of quality urgently needs standardized service standards.	1. multi-dimensional assessment requires the establishment of a mechanism to manage the whole process of assessment. Avoiding the burden of assessment. 2. Improving the management of service files to ensure the continuity and efficiency of services while providing a basis for quality assessment.	1. The establishment of a teamwork-based, specialized hospice passport care quality assessment tool. 2. An online assessment system for hospice quality management. 3. A mechanism for managing service satisfaction.

Based on the results of the cross-analysis, this study explores how to optimize and enhance the management of hospice service by summarizing the characteristics of the needs and the various complex interests that prevail in public hospitals in the process of hospice service delivery. Due to space limitations, this study takes pain control as an example to dissect the interests that exist in patients' pain control needs.

Significant individual differences in patients' perception and tolerance of pain mean that standardized pain management strategies are difficult to adapt to the needs of all patients. However, pain medication management must follow strict clinical guidelines, which are usually based on data from large samples of clinical trials and cannot adequately take into account patients' individual differences and subjective feelings. This creates a paradox: how can we meet patients' individualized pain control needs while following clinical guidelines? Pain control is not only a medical issue, but also a complex issue involving humanistic care and communication skills. It requires healthcare professionals to have not only solid professional knowledge, but also rich clinical experience and good interpersonal skills. However, in reality, due to resource constraints and work pressure on healthcare professionals, they may not be able to devote enough time and energy to each patient, which leads to poor pain control and difficulty in meeting the expectations of patients and families. When pain control fails to meet expectations, patients and families may become dissatisfied and negatively evaluate healthcare professionals, further exacerbating tensions in the doctor-patient relationship.

In order to relieve patients' pain, non-pharmacologic treatment modalities need to be explored in addition to medication. Currently, psychological interventions such as music therapy and meditation have been shown to be complementary to pain control. However, these psychological intervention services are usually provided by counselors and are not yet covered by health insurance, resulting in high service costs. In addition, Chinese society at large has a more generalized rejection of psychological interventions, and this cognitive bias has led to the reluctance of many patients and their families to accept psychological interventions for pain relief. As a result, they are more inclined to ask doctors to continue trying different medications to control pain, which undoubtedly increases the complexity and risk of pain medication. To change the social cognition of patients and their families, the intervention of third-party forces is needed, so as to strengthen pain education and psychological guidance for patients and their families, and to improve their awareness and ability of pain management.

It is clear that hospice service, because of the individualized nature of its needs, has a particular need for professional competence. It covers a wide range of disciplinary fields such as medicine, nursing, psychology, sociology, and others, which requires that professionals with multidisciplinary backgrounds work together in the service process. This interdisciplinary cooperation model not only increases the complexity and challenge of the service, but also puts forward more stringent requirements for the service management mechanism. In hospice service, each patient is unique, with different needs, conditions, and psychological states. Therefore, service providers must have a high degree of professionalism and keen observation, and be able to develop personalized care plans for patients' specific conditions. In addition, they need to possess excellent communication skills and empathy in order to build trusting relationships and provide emotional support to patients and their families. However, to achieve this high level of individualized service, it is not enough to rely on professionals in one discipline alone. Close collaboration among multidisciplinary teams of medical specialists, nurses, counselors, social workers, and others, is essential. This requires a service management mechanism that promotes effective communication and collaboration between different disciplines to ensure that patients receive comprehensive, continuous and efficient care.

Undoubtedly, hospice service has demonstrated their unique humanistic care and medical value in enhancing the quality of life of patients with advanced cancer. The development of such services in public hospitals not only makes full use of the existing medical resources, but also can respond quickly and effectively to patients’ emergencies. However, in the existing healthcare management structure, hospice service is often nested within oncology departments based on the traditional medical model, and this dependency relationship has revealed multiple conflicts of interest in practice.

The first problem is the complexity of management, which is mainly reflected in two aspects: on the one hand, there are significant differences between hospice service and oncology treatments in terms of staff composition, professional skills, and service objectives, which lead to the complexity of the original clear management structure; on the other hand, the inpatient oncology department of public hospitals implements strict management regulations on the entry and exit of staff, but the implementation of hospice service requires the participation of multiple external forces, including the participation of the public hospitals, the public hospitals, and the public hospitals. The implementation of hospice service, however, requires the participation of multiple external forces, including volunteers, media workers, and religious figures. Due to the frequent movement of these people from different backgrounds, it has brought obvious troubles to the daily management of oncology departments.

Furthermore, from a financial standpoint, the low-yield nature of hospice service puts a significant financial strain on oncology departments. Hospice service usually require more human resource inputs, but these inputs often do not translate into substantial financial returns in a short period of time, and then affects the performance appraisal grade of the oncology department and its development.

Based on the existing single-discipline assessment mechanism in hospitals, this study concluded that by establishing an independent hospice service department, we can break the constraints of the traditional medical model and optimize the allocation of medical resources by structural adjustment. A multidisciplinary management model will be adopted to operate the new hospice service unit to jointly respond to the complex demands faced by the hospice field, thus improving service efficiency and quality. The establishment of an independent hospice department will allow for more precise development of assessment indicators that meet the requirements and needs of the service, thereby more effectively measuring and evaluating service outcomes.

On this basis, it is particularly crucial to establish a set of scientific and perfect service management mechanism. This includes a clear service process, reasonable staffing, effective communication and coordination mechanisms, and a continuous quality improvement system (Fu et al., 2022). Only in this way can it be ensured that hospice service can provide patients with truly comprehensive care supported by high standards of professional competence.

3.4.2 Importance of stakeholders and their advocacy

Economist Alcian believes that an organization is a team production process that can efficiently utilize various resources. In this process, the owners of production factors can significantly enhance productivity and create more benefits by forming teams for production. At the same time, the organization itself also plays the role of supervising team production to ensure the smooth progress of the production process. In the field of hospice service, public hospitals need to take strategic measures to undertake social responsibility in order to gain the support of various stakeholders. This can not only enhance the hospital's social benefits but also bring economic benefits. However, to achieve this goal, it is essential to rely on the integration of resources from all stakeholders. Only by fully understanding and valuing the rights and interests of every resource holder (whether individual or group) can their enthusiasm for resource input be stimulated, especially that of internal stakeholders. Therefore, in promoting the construction of hospice service, we must fully understand and grasp the interests of all stakeholders, ensure that their rights and interests are fully protected, and thus stimulate their enthusiasm and participation.

Based on the analyses of the previous research, the claims of stakeholders have three basic characteristics: first, the claims of interests are the protection of their own rights and interests, such as the right of patients and their families to decide whether to continue to receive hospice care services based on their satisfaction with the services, and volunteers to voluntarily choose whether to participate in the hospice care services, and so on.

Secondly, the relationship between the demands of various stakeholders in hospice service is intricate and interacts with each other. Through in-depth interviews and analysis, this study reveals the advantages of the multidisciplinary collaborative management model in effectively responding to the needs of hospice service. However, the complex landscape of interests poses tougher challenges and higher demands on human resource management, operational strategies and many other aspects. As discussed earlier, the lack of professional knowledge, low skill levels, and the stress caused by the accumulation of negative emotions all adversely affect stakeholders' willingness to participate in hospice care. In addition, inadequate communication mechanisms further weakened the foundation of trust between doctors and patients, which had a significant negative impact on the smooth promotion of hospice service, the improvement of service quality, and the satisfaction of patients and their families. It is clear that hospice care services cannot be supported by one type of person or a small number of people alone, but also need to be assisted by professionals and related groups in different roles depending on the service needs. Furthermore, consistency of interest and conflict of interest coexist. Based on the content analysis of the interviews and the results of existing studies, taking the demands of the core stakeholders as an example, patients want to be fully informed of their end-of-life status and the corresponding treatment plan, while the demands of family members focus on protecting the psychological and mental state of patients, and they worry that too much information about their condition will have a negative impact on patients. In this regard, healthcare professionals bear the responsibility of clearly informing patients of their condition, but also face the risk of accelerating the deterioration of the patient's condition (Tang, 2017).

In the service process, the resource advantages and service contribution values of various stakeholders vary, hence organizations cannot treat all stakeholders with equal consideration. The purpose of attribute classification is to determine the priority of each stakeholder in order to allocate resources and coordinate more effectively. Given that the contributions and outputs of various team members are difficult to quantify, especially under limited resource conditions, we must rely on reasonable and efficient systems and measures to balance the needs of all parties, ensuring the maximization of resource utilization and the optimization of service provision. In this way, we can better meet the expectations of all stakeholders while promoting the continuous development and progress of the entire organization.

3.4.3 Constructing a hospice care service platform for public hospitals

Unlike specialist hospitals, which are concentrated in size and specialize in treating specific diseases, large-scale comprehensive public hospitals represent the high level of medical technology in their region, and are a solid line of defense for guarding the lives and health of the public, and deserve to have clear responsibilities and functional positioning to serve terminally ill patients. In China, public hospitals are benefit-creating organizations with independent production factors, which are composed of stakeholders with different resources. The provision of end-of-life care services requires a rational allocation of human and medical resources, otherwise it is difficult to ensure the integrity and sustainability of end-of-life care services (B. Yang et al., 2018). In the public health system, public hospitals, with their more advanced medical facilities and experienced medical teams, not only provide disease treatment but also attach importance to the implementation of hospice service and its related training. Medical staff in such medical institutions are more frequently exposed to professional training in hospice service, thereby being able to provide more professional and high-quality services in various dimensions, including symptom management, psychological nursing, and information transmission.

Patient-driven medical services in public hospitals reflect the concept of "people-oriented", which can be achieved through the creation of a hospice care service platform that breaks down departmental boundaries, integrates the strengths of multidisciplinary groups, and achieves resource sharing in the form of a "one-hospital system". The operation and management mode of this platform covers the whole life cycle of end-of-life care, and needs to be optimized and improved through exploration and practice, so as to gradually form a comprehensive treatment service for advanced tumors with individualized and standardized treatment, and truly integrate prevention, treatment, rehabilitation, end-of-life care and humanistic care into one.

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Chapter 4: Construction of A Management Mechanism for Hospice service for Advanced Cancer Patients in Public Hospital

Through in-depth interviews and analysis in the preliminary stage, this study reveals the advantages of the multidisciplinary collaborative management model in effectively responding to the demand for hospice service. However, the complex pattern of interests poses more severe challenges and higher requirements for human resource management, operational strategies, and many other aspects. To promote the development of China's hospice service towards a more standardized and normalized direction, it is particularly important to establish an evaluation index system for the quality of hospice service that meets the actual needs of China. This system will not only provide quantitative assessment tools for objective comparison of the quality of hospice service among different pilot institutions and regions, but also lay a solid foundation for the continuous improvement of hospice service in Mainland China and become an important pillar of its development. Through this system, it is possible to more accurately understand the current status of services and identify room for improvement, thus promoting the overall improvement of hospice service in China.

In this study, the Delphi method and hierarchical analysis were used to construct a quality evaluation index system for hospice service. On this basis, this study further applies the fuzzy evaluation method to provide an assessment tool for the objective and quantitative evaluation of the quality and effect of the pilot hospice service in China, according to which the actual situation of the pilot hospitals' service development is analyzed, and the management mechanism is optimized, which provides a scientific basis for the in-depth analysis of the bottlenecks of the development of the hospice service pilot, and for the promotion of the standardization and balancing of the services.

4.1 Establishment of indicators for evaluating the quality of hospice service for advanced cancer patients in public hospitals

The 2021 WHO research report emphasizes that the quality assessment and improvement of hospice service should begin from the moment patients receive the service (World Health Organization, 2022). However, in the international academic community, research on the monitoring and evaluation of hospice service usually focuses on macro-level analysis at the national or regional level, which may overlook the inherent differences and diversity in hospice service systems among different countries to some extent. In contrast, domestic research tends to focus on specific practice scenarios or service providers, mainly using internationally recognized scales or locally developed scales. Through surveys of small samples of hospitalized patients, these studies compare changes in care effects and satisfaction or assess the improvement of care staff's service capabilities. However, there are certain shortcomings in evaluation indicators that take into account sociocultural factors (Xu et al., 2019). Particularly, comprehensive evaluation research and scale development for hospice service from the perspective of pilot institutions are relatively lacking. This lack of research limits a comprehensive understanding and enhancement of the quality of hospice service.

In fact, whether from the perspective of the needs of patients at the end of life or considering the continuous development of hospice service departments, the assessment of the quality of hospice service should not be limited to the comfort of care and the effects of symptom control for patients. Based on the development needs of hospice service, a more comprehensive and detailed evaluation system should be established, covering multiple dimensions such as service processes, care effects, personnel capabilities, patient satisfaction, and socio-cultural influences, in order to more accurately reflect the true quality and level of hospice service.

4.1.1 Principles of evaluation index system construction

In this study, the extraction of indicator items followed established principles to ensure the rigor and effectiveness of the research.

The first principle is the scientific principle. That is, when selecting evaluation indicators, it is not only necessary to ensure that these indicators can fully reflect the core elements of hospice service, but also to closely integrate the actual operating conditions and specific practice environment of hospice service for detailed analysis and construction. Based on stakeholder theory, this study strictly followed the established inclusion and exclusion criteria to select interviewees and consulted experts. To ensure the representativeness, authority, and professionalism of the research results, this study employed a comprehensive data analysis strategy combining the Delphi method and the Analytic Hierarchy Process. The Delphi method, as a systematic expert consultation method, can effectively integrate expert opinions, improving the accuracy and reliability of the research. At the same time, the application of the AHP helps to quantify the analysis and verification of data, ensuring the objectivity and scientific nature of the research findings.

Second, there is principle of integrity. Under the guidance of stakeholder theory, the multidisciplinary collaborative model of hospice care should pay full attention to symptom control, comfortable nursing, care support, psychological support, spiritual care, narrative medicine, teamwork, service assurance, and service effectiveness evaluation when providing supportive treatment for patients with advanced cancer, and at the same time pay attention to the internal driving force of other stakeholders' participation in the service. Therefore, in the construction of hospice care service indicators for advanced cancer patients in public hospitals, the specific content of indicators should be determined based on the demands of stakeholders, and the content of hospice care service should be systematically presented while the interest demands and interest relations in various aspects of service development should be clarified.

Third, the principle of operability. When constructing the index system of hospice care service for advanced cancer patients in public hospitals, it is necessary to ensure the integrity, comprehensiveness and systematicity of the index, and pay attention to the operability of the index system. Hospice care service has a wide range of contents. Although complex and numerous evaluation indicators can reflect the overall content of hospice care, if there are too many index items, the difficulty of operation will be increased, resulting in poor operability of the index system, and the index system will be just a mere form. Correspondingly, if the index system is too simple, it cannot reflect the overall status and basic level of hospice care services. It can be seen that the selection of hospice care service indicators and the construction of the system for advanced cancer patients in public hospitals should have strong feasibility and operability. On the basis of refining the main demands of the stakeholders involved in hospice care, the number of indicators in the index system is reduced and controlled as far as possible according to the hospice care service guidelines, so as to ensure the effectiveness and operability of the evaluation indicators.

4.1.2 Index retrieval and filtering results

According to research needs, a 6-person research team was composed of oncologists, psychological consultants, nurses in oncology, nursing managers, nursing graduate students, and medical social workers. The work of the group mainly includes literature retrieval, preparation and distribution of letter inquiries, selection of letter inquiries experts, data collection, item selection, expert opinion summary and feedback, data sorting and analysis, and others.

In the current medical system, there is a lack of a recognized and unified evaluation standard for hospice service for late-stage cancer patients in public hospitals. Building upon previous qualitative interview research, our research team extensively reviewed relevant academic literature both domestically and internationally, and referred to authoritative guidelines such as the "Hospice service Practice Guideline (Trial)" issued by the National Health Commission and the "National Consensus Project for Quality Hospice service." Through a comprehensive assessment, this study established specific criteria for the selection of evaluation indicators: the average importance score is more than 4 points, and the coefficient of variation is less than 0.25. Based on literature review, results of semi-structured interviews, theoretical analysis, and through several rounds of in-depth discussions within the research team, a preliminary framework for evaluating the hospice service of public hospitals was constructed.

4.1.3 Delphin method

4.1.3.1 Expert inclusion criteria

A reasonable selection of experts is the key to the Delphi method. The selected experts should be representative and authoritative. At the same time, factors such as the expert's professional field and region should be considered. The number of experts is generally 15 to 30. A total of 18 experts were selected for letter inquiries according to the actual situation in this study, whose work covered 7 fields of clinical medicine, medical management, nursing management, nursing education, clinical nursing, psychology and social work. Inclusion criteria for experts are: (1) Obtaining associate professor title or above, or being engaged in hospice care services for more than 4 years; (2) Having a bachelor's degree or above; (3) Being engaged in clinical medical treatment, nursing management, nursing education, clinical nursing, medical management, psychology and medical social work; (4) Bing highly motivated to participate in this research, and willing to cooperate in completing multiple rounds of expert correspondence (Chen et al., 2019).

A total of 20 experts met the above four inclusion criteria, covering a wide range of professionals such as managers of health administration departments, professors of ethics and nursing in medical schools, heads of public welfare organizations, medical social workers, psychological counselors, managers with professional backgrounds in medical institutions, oncology nurses, chief oncologists, and others, which is representative of the profession. After the correspondence, a total of 18 experts completed the entire correspondence. The basic information of the experts is listed in Table 4.1:

Table 4.1 Basic information about the experts

Project	Classification	Number of People	Project	Classification	Number of People
Gender	Male	7	Work Area	Clinic Medicine	3
	Female	11		Medical Management	3
Age	30-40	12		Nursing Management	1
	41-50	5		Nursing Education	2
	＞50	1		Clinical Care	5
Education	Undergraduate	2		Social Work	2
	Master	8		Psychological Counseling	2
	Doctor	8	Job Title	Middle	4
Years of Working	5-15 years	12		Sub-Senior	11
	16-30 years	6		Senior	3
	＞31	0			

4.1.3.2 Experts Enthusiasm

According to existing literature, there is a significant correlation between the enthusiasm of experts and the recovery rate, efficiency, and the number of constructive suggestions in the correspondence results. The academic community generally agrees that if the recovery rate and efficiency of the correspondence both reach over 70%, it can be considered that the experts' level of participation is quite active. In this study, a total of two rounds of expert correspondence were conducted, through various methods such as WeChat, email, and face-to-face offline communication. The selected experts showed clear enthusiasm for participating in this study, and the correspondence results also showed that the recovery rate and efficiency both reached 90%. This data indicates that the experts were very active in their participation in this study and showed a high degree of cooperation in providing feedback and suggestions.

4.1.3.3 Expert Authority

According to the Delphi method, the degree of expert authority is expressed by the coefficient of expert authority (*Cr*), which is based on self-evaluation *Cr* is determined by two factors: □ coefficient of judgment: the basis for the expert's judgment on the issue, expressed as *Ca*; □ degree of familiarity: the degree of familiarity of the expert with the indicator, expressed as *Cs*. Degree of authority = (coefficient of judgment + degree of familiarity)/2, $Cr=(Ca+Cs)/2$. The greater the value of *Cr,* the higher the degree of expert authority. Peer understanding 0.1, 0.1, 0.1, intuition 0.1, 0.1, 0.1. Experts' familiarity with hospice care in public hospitals, *Cs*, was assigned the values of 1.0, 0.75, 0.50, 0.25, and 0.0, respectively (Wang & Si, 2011).

In this letter inquiries, the statistical analysis results of the expert’s authority are shown in the Table 4.2.

Table 4.2 Results statistics of expert authority coefficient Cr

Practical Experience	Theoretical Analysis	Reference to Domestic and Foreign Literature	Intuitive Feeling	Judgment Data Ca	Familiarity Cs	Authority Coefficient Cr
0.5	0.2	0.1	0.1	0.9	1	0.95
0.5	0.2	0.1	0.1	0.9	1	0.95
0.5	0.1	0.1	0.1	0.8	0.75	0.775
0.5	0.1	0.1	0.1	0.8	1	0.9
0.4	0.3	0.1	0.1	0.9	1	0.95
0.5	0.1	0.1	0.1	0.8	1	0.9
0.5	0.2	0.1	0.1	0.9	0.75	0.825
0.4	0.2	0.1	0.1	0.8	0.75	0.775
0.4	0.3	0.1	0.1	0.9	0.75	0.825
0.5	0.2	0.1	0.1	0.9	0.75	0.825
0.5	0.1	0.1	0.1	0.8	1	0.9
0.5	0.2	0.1	0.1	0.9	0.75	0.825
0.5	0.2	0.1	0.1	0.9	1	0.95
0.5	0.1	0.1	0.1	0.8	0.5	0.65
0.5	0.1	0.1	0.1	0.8	1	0.9
0.5	0.1	0.1	0.1	0.8	1	0.9
0.5	0.1	0.1	0.1	0.8	1	0.9
0.5	0.2	0.1	0.1	0.9	0.5	0.7
		Mean		0.850	0.861	0.856

It can be seen from the above table that the judgment data (*Ca*) value of the 18 experts is 0.85, the familiarity degree (*Cs*) value is 0.861, and the authority coefficient (*Cr*) value is 0.856, >0.7, which indicates that the expert has a high degree of authority, the consultation results are reliable, and the expert advice can be adopted.

4.1.3.4 Degree of coordination of expert opinion

The degree of coordination of expert opinions reflects whether there is a large divergence in the evaluation of each indicator by experts, and is usually expressed by the coefficient of variation (*CV*) and Kendall's. The coefficient of variation is the ratio of the standard deviation to the mean. The smaller the coefficient of variation (*CV*), the lower the degree of disagreement among experts on the item, indicating a higher degree of expert coordination. *CV*< 0.25 is generally considered to indicate a relatively consistent degree of expert coordination. After three rounds of correspondence, including pre-consultation, the first round of correspondence, and the second round of correspondence, the final Kendall's Harmony Coefficient of the first level indicator was 0.389, and the Kendall's Harmony Coefficient of the second level indicator was 0.392. The Kendall's Harmony Coefficient of the third level indicator was 0.783, and the average value was 0.521, with p-values of all <0.001.

4.1.3.5 Analysis of the results of the experts' correspondence inquiry

According to the relevant literature research, synthesizing the results of the correspondence inquiry and the suggestions made by the experts, the mean value of importance is greater than 3.5, and the coefficient of variation is greater than 0.25 as the inclusion criteria of the indicators. According to the results of the two rounds of correspondence, the adjustment results of each indicator are summarized as follows:

Adjustment 1: Four experts proposed to modify the indicator "patient care" because the concept of patient care is ambiguous, which can be expressed as physical care for patients or care covering physical, mental and spiritual aspects. Based on further communication between the research team and the experts, the term "patient care" was revised to "symptom management".

Adjustment 2: Three experts considered that the concept of service management was broad and prone to bias in understanding. Therefore, it is recommended that "service management" be revised to "service management mechanism" or "management system" or "service management model". An important part of hospice service is to link the stakeholders and their resources in a certain operational way, so that they can operate in a coordinated way to play the role and value of the service. In this regard, the Study Group adopted the experts' suggestion to amend "service management" to "service management mechanism".

Adjustment 3: Five experts pointed out that there was a conflict of concepts in the tertiary indicator "non-therapeutic hospice care" and suggested that it should be amended to "non-therapeutic care" or "hospice care". The research team consulted the relevant conceptual definitions and revised the indicator to "non-pharmacological treatment".

Adjustment 4: Two experts said that the concept of "access to information" in the tertiary indicator was rather vague, and suggested that it should be revised to "medical information consultation and support" or "medical consulting services". This proposal explains the content of the demand in a more specific way, and the study has decided to adopt it.

Adjustment 5: One expert suggested that "preservation of dignity and value" in the tertiary indicators could be further refined to "preservation of dignity". The research team discussed and analyzed from a supportive perspective that the dignity, meaning and value of terminally ill patients need to be jointly safeguarded and preserved, so it decided to adopt the expert's suggestion.

Adjustment 6: Three experts questioned the "service collaboration model" in the tertiary indicator, and based on further discussion of the content of this indicator, focusing on the management of service rules and regulations and analyzing it from the perspective of management mechanism, the indicator was finally adjusted to "rules and regulations".

Based on the Delphi method research and analysis, the final quality evaluation index of hospice service for advanced cancer patients in public hospitals contains 3 primary indicators, 9 secondary indicators and 28 tertiary indicators.

4.2 Determine index weights by AHP

In the evaluation index system, the role and influence degree of indicators at all levels are not consistent in the whole index system, Indicators have a certain hierarchical relationship, for the same level of indicators to determine the relative importance of the judgment, judgment in the evidence of the assignment of the indicator reflects the experts on the relative importance of the indicator's knowledge. Therefore, this study uses the hierarchical analysis method in statistics to determine the weight of the indicators, the weight of the indicators is a quantitative expression reflecting the relative importance and role of the indicators in the overall evaluation, generally the more important the indicators, the higher the weight value. In this study, according to the last round of experts' assignment of the importance of the indicators, the established hierarchical model and the constructed judgmental proofs are inputted into the Hierarchical Analysis Method software to obtain the weights and comprehensive weights of the indicators of the public hospital hospice service for patients with advanced cancer, and the Consistency Ratio < 0.1 is obtained, which indicates that the assignment of the importance of this judgmental matrix is in accordance with the mathematical logic, that is., the indicators' weight assignment is reasonable.

4.2.1 Build AHP model

（1）Construct judgment matrix:

$$A=\begin{bmatrix} a_{11} & a_{12} & \cdots & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & \cdots & a_{2n} \\ \cdots & \cdots & a_{ij} & \cdots & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots \\ a_{n1} & a_{n2} & \cdots & \cdots & a_{nn} \end{bmatrix} \tag{4.1}$$

a_{ij} in the matrix represents the importance of A_i to A_j. If the former is more important,

$a_{ij} > 1$; If they are equally important, $a_{ij} = 1$.

（2）Judge the importance of matrix element

As shown in Table 4.3:

Table 4.3 Relative importance ratio standard

Scale	Meaning
1	Comparing two factors, they have the same importance.
3	Comparing two factors, the former is a little more important than the latter.
5	Comparing two factors, the former is more important than the latter.
7	Comparing two factors, the former is greatly more important than the latter.
9	Comparing two factors, the former is extremely more important than the latter.
2、4、6、8	Intermediate value of two adjacency factors
Reciprocal of the above value	The converse comparison value is the reciprocal of the original comparison value

（3）Calculate weighted vector of the index

Steps of normalization method

First: Using the following formulas, normalize the data:

$$\overline{a_{ij}} = a_{ij} / \sum_{i=1}^{n} a_{ij} (i, j = 1, 2, \cdots n) \tag{4.2}$$

a_{ij} is the data at line i and column j in the matrix A. $\overline{a_{ij}}$ is the data at line i and column j in the normalized matrix.

Second: add the elements in the matrix.

$$\overline{w_i} = \sum_{j=1}^{n} \overline{a_{ij}} (i, j = 1, 2, \cdots n) \tag{4.3}$$

Third: Normalize $\overline{w_i}$ in the above formula:

$$w_i = \overline{w_i} / \sum_{i=1}^{n} \overline{w_i} (i = 1, 2, \cdots n) \tag{4.4}$$

w_i is the weight of index i.

Fourth: Calculate the maximum eigenvalue of the judgment matrix A.

$$\lambda_{\max} = \frac{1}{n} \sum_{i=1}^{n} \frac{(Aw)_i}{w_i} \tag{4.5}$$

n is the order of the matrix A is the judgment matrix. w_i is the weight of index i.

$\lambda_{\max}$ is the maximum eigenvalue of the judgment matrix A

（4）Consistency test: Check the consistency of the above obtained vectors and eigenvalues. If they can pass the test, the judgment matrix is reasonable, namely, has explanatory value.

Assume *CI* represents the consistency index. Following is the algorithm,

$$CI = \frac{\lambda_{\max} - n}{n-1} \tag{4.6}$$

Through n-value, we can obtain the RI-value and then the consistency ratio (*CR*= *CI*/ *RI*). If *CR*< 0.1, it meets the requirement.

4.2.2 Build the judgment matrix and solve the weight

In this study, relevant experts were invited to score the importance of the indicators separately, and then the scoring results were discussed and summarized internally to obtain the two-by-two discriminant matrix as shown in Table 4.4:

Table 4.4 The pairwise judgement matrix

	Hospice care service	Team management	Resource management
Symptom Management	1	3	3
Psycho-spiritual support	1/3	1	1/2
Service management Mechanism	1/2	2	1

First calculate the maximum eigenvalue of the judgment matrix, $\lambda_{\max} = 3.0092$. Then calculate the consistency index *CI* before the consistency test:

$$CI = \frac{\lambda_{\max} - n}{n-1} = \frac{3.0092-3}{3-1} = 0.0046 \tag{4.7}$$

Average random consistency index, *RI*= 0.58. Random consistency ratio:

$$CR = \frac{CI}{RI} = \frac{0.0046}{0.58} = 0.0079 < 0.10 \tag{4.8}$$

Because *CR*< 0.1, the construction of the judgement matrix can be regard reasonable. See the Table 4.5 for the index weights we calculate:

Table 4.5 Results of the analysis of indicator weights

Index layer	Weight
Symptom management	0.5390
Psycho-spiritual support	0.1638
Service management Mechanism	0.2973

Similarly, the results of index weights at all levels can be calculated, the specific information is shown in the Table 4.6:

Table 4.6 Summary of indicator weights and combination weights results

Primary indicators	Weigh	Secondary indicators	Weigh	Tertiary indicators	Weigh	Comprehensive weight
Symptom management	0.539	Symptom control	0.7545	Pain control	0.5949	0.2419
				Other symptom control	0.1285	0.0523
				Symptom dynamic assessment mechanism	0.2766	0.1125
		Comfortable nursing	0.0919	Nursing guidance	0.3092	0.0153
				Non-drug treatment	0.5813	0.0288
				Specific nursing	0.1096	0.0054
		Care support	0.1535	Pharmaceutical administration	0.1698	0.0140
				Nursing guidance	0.4429	0.0366
				Medical consulting service	0.3873	0.0320
Psycho-spiritual support	0.1638	Psychological support	0.6232	Psychological assessment	0.3338	0.0341
				Intervening measure	0.5247	0.0536
				Peer support	0.1416	0.0145
		Spiritual care	0.1373	Spiritual needs assessment	0.1263	0.0028
				Death education	0.4577	0.0103
				Dignity maintenance	0.416	0.0094
		Narrative medicine	0.2395	Life review	0.1263	0.0050
				Vital file	0.4577	0.0180
				Emotional support	0.416	0.0163
Service management mechanism	0.2973	Teamwork	0.539	Communication and coordination mechanism	0.6333	0.1015
				Service skills assessment	0.2605	0.0417
				Rules and regulations	0.1062	0.0170
		Service assurance	0.1638	Training and education	0.4959	0.0241
				Hardware facility	0.2887	0.0141
				Humanistic care	0.0858	0.0042
				Third-party support	0.1296	0.0063
		Service effectiveness evaluation	0.2973	Professional evaluation	0.5869	0.0519
				Satisfaction evaluation	0.3238	0.0286
				Service file management	0.0893	0.0079

4.3 Construct a hospice care service team management model for advanced cancer patients in public hospitals

4.3.1 Selection of research subjects

In 1965, Prof. Chad, an authoritative scholar in the field of automatic control in the U.S., proposed the fuzzy set theory for the first time, and the innovation of the theory lies in its ability to express and deal with the uncertainty of things. Fuzzy comprehensive evaluation model is a kind of multi-attribute decision analysis technique that integrates hierarchical analysis and fuzzy comprehensive evaluation method. The model is built on the basis of the affiliation function theory of fuzzy mathematics, which describes the qualitative evaluation through quantitative methods, enabling the researcher to carry out an all-round and systematic evaluation of things or objects affected by multiple factors. In the process of practical application, the fuzzy comprehensive evaluation model first decomposes the complex evaluation index system into several hierarchical structures. Subsequently, hierarchical analysis is utilized to determine the weights of each indicator factor within the same level, while fuzzy mathematical theory is applied to construct the fuzzy relationship matrix between different levels. The information is analyzed and evaluated comprehensively through fuzzy operations, and the evaluation results are finally converted into an intuitive and easy-to-understand form. The advantage of this model lies in the clarity and systematicity of its results, which is especially suitable for dealing with problems that are fuzzy and difficult to quantify. Therefore, the multilevel fuzzy comprehensive evaluation model provides a scientific and effective decision support tool for solving uncertainty problems, and has important theoretical and practical value for the evaluation and decision making of complex systems.

This study chooses the multilevel fuzzy comprehensive evaluation method to assess the quality of hospice service, mainly based on the following four considerations:

First, the fuzzy comprehensive evaluation method is highly respected for its wide applicability, which can not only cope with evaluation problems involving subjective factors, but also effectively handle evaluation scenarios with objective factors. When dealing with managerial problems containing subjective factors, the method accurately determines the fuzzy affiliation degree of each single factor relative to the different levels in the rubric set by means of fuzzy processing technology, thus skillfully transforming the qualitative indicators that are originally difficult to be quantified into quantitative indicators that can be operated. Because of the complexity and ambiguity of the relationship of interest claims between stakeholders involved in hospice service, this ambiguity is also reflected in the service quality assessment indicators constructed on the basis of these interest claims. In view of this, these ambiguity factors need to be fully considered when conducting relevant research and assessment to ensure the accuracy and reliability of service quality assessment results.

Secondly, the service quality assessment of hospice service management involves different individuals and groups. Therefore, the evaluation method needs to be simple and easy to implement, and the fuzzy comprehensive evaluation method precisely meets this requirement.

Furthermore, the fuzzy comprehensive evaluation method demonstrates an excellent ability to deal with the complexity of multilevel evaluation indicators. In the process of comprehensive evaluation, the evaluation process presents a cyclical nature, i.e., the evaluation results of the previous stage can be used as the input data for the evaluation of the next stage, thus realizing the continuity and dynamics of evaluation. However, when the number of evaluation factors is huge, if all the factors are generalized in the same set to determine the weights, it may lead to the dilution of the weight value of each factor, which in turn will not be able to form an effective weight difference. In order to overcome this difficulty, we adopt a stratification strategy in practice, i.e., we divide the factors into different tiers and sets according to their characteristics. This tiered approach helps us determine the affiliation of the factors more precisely and assign them differentiated weights, thus ensuring the accuracy and fairness of the evaluation. The application of this method is particularly appropriate and effective for the complex scenario of evaluating the quality of hospice service for patients with advanced cancer in public hospitals, which involves multiple layers of indicators.

Finally, the results of fuzzy comprehensive evaluation are usually presented in the form of vectors of fuzzy subsets, which can more accurately portray the fuzzy attributes of the evaluation object. Compared with a single numerical representation, the vector form can provide more detailed evaluation information, thus fully demonstrating the unique advantages of the fuzzy comprehensive evaluation method.

4.3.2 Application of the Fuzzy Integrated Evaluation Method

4.3.2.1 Rationale and considerations for selection

In 1965, the concept of fuzzy set theory was proposed by Prof. L. A. Zadeh, an American expert in automatic control, to express the uncertainty of things. Multi-level fuzzy comprehensive evaluation model is a multi-attribute decision-making technology that integrates the evaluation methods of hierarchical analysis method and fuzzy comprehensive evaluation method. According to the theory of affiliation degree in fuzzy mathematics, qualitative evaluation is transformed into quantitative evaluation, that is., fuzzy mathematics is used to make an overall evaluation of the things or objects that are subject to multiple factors. It decomposes the evaluation index system into a progressive multi-level structure, introduces hierarchical analysis and fuzzy mathematics theory, determines the weights of index factors at the same level by using hierarchical analysis, determines the fuzzy relationship matrix between different levels by using fuzzy mathematics theory, and then carries out a comprehensive evaluation by fuzzy operation, and finally converts the comprehensive evaluation result into the final evaluation result. It is characterized by clear and systematic results, can better solve fuzzy and difficult quantify problems, and is suitable for solving various non-deterministic problems.

This study chooses the multilevel fuzzy comprehensive evaluation method to assess the quality of hospice service, mainly based on the following four considerations:

First, the fuzzy comprehensive evaluation method has a wide range of applications, and it is not only applicable to the evaluation of subjective factors, but also to the evaluation of objective factors. For management science problems involving subjective factors, determining the fuzzy affiliation degree of each single factor relative to each level of the rubric set through fuzzy processing can effectively transform qualitative indicators into quantitative indicators. Because of the complexity and ambiguity of the relationship of interest claims between stakeholders involved in hospice service, this ambiguity is also reflected in the service quality assessment indicators constructed on the basis of these interest claims. In view of this, these ambiguity factors need to be fully considered when conducting relevant research and assessment to ensure the accuracy and reliability of service quality assessment results.

Secondly, the service quality assessment of hospice service management involves different individuals and groups. Therefore, the evaluation method needs to be simple and easy to implement, and the fuzzy comprehensive evaluation method precisely meets this requirement.

Furthermore, the fuzzy comprehensive evaluation method is able to deal with the complexity of multi-level evaluation indicators. In the comprehensive evaluation process, the evaluation process can be carried out cyclically, and the evaluation results of the previous process can be used as input data for the evaluation of the subsequent process. When there are too many evaluation factors, if all the factors are put in the same set to determine the weights, it may lead to the weight value of each factor being too small to form effective differences. Therefore, in practice, we categorize factors into different layers and sets according to their characteristics in order to more accurately determine their affiliation and weights with differences. This is very applicable to the evaluation of the quality of hospice service for advanced cancer patients in public hospitals, which consists of multilayer indicators.

Finally, the results of the fuzzy comprehensive evaluation are presented in the form of fuzzy subset vectors, which can more accurately describe the fuzzy status of the evaluation object. Compared with single values, vectors provide richer evaluation information, thus better reflecting the superiority of the fuzzy comprehensive evaluation method.

4.3.2.2 Steps in applying fuzzy comprehensive evaluation

Fuzzy evaluation is based on the relevant principles of fuzzy mathematics, and the characteristic representation ability of each indicator is determined by calculating the membership degree of each indicator to the evaluation target. After selecting the appropriate indicator system, the content of the indicators is quantified by conventional mathematical means, thus enhancing the objectivity of the evaluation model. After determining the weights of indicators through AHP, the steps of fuzzy integrated evaluation method are as follows:

□Determine the factor domain of the evaluation object

Set $U=\{u_1,u_2,...,u_m\}$ as an ensemble of indicators that characterize the evaluation objective;

□Determine the domain of the rating of the comment

Use $V=\{v_1,v_2,...,v_n\}$ as the evaluation grade that indicates the evaluation grade of various indicators that can characterize the evaluation target, the parameter can be adjusted and decided by the specific indicator system, generally divided into 3-5 grades. In this study, the evaluation grade is divided into 4 grades, V= [V1, V2, V3, V4] = [Excellent Good Pass Fail], and assigned as V= [100 75 50 25], and all grades will be one-to-one correspondence with a fuzzy subset.

□Establish the overall fuzzy relationship matrix R

The fuzzy relationship matrix R between all the evaluation indicators and the evaluated target is as follows:

$$R=(r_{ij})_{m\times n}=\begin{bmatrix} r_{11} & r_{12} & \cdots & r_{1n} \\ r_{21} & r_{22} & \cdots & r_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ r_{m1} & r_{m2} & \cdots & r_{mn} \end{bmatrix} \tag{4.9}$$

④Determine the weight vector of the evaluation factor

Assuming that the set of weight vectors of each system is $A=\{a_1,a_2,...,a_n\}$, in this set, a_i denotes the degree of affiliation of indicator u_i in the fuzzy subset with the system of evaluation objectives, in this study, in the process of determining the weight vectors of the evaluation factors, the weights and fuzzy matrices obtained from the AHP are applied to calculate the weight level between the indicators, and then the power coefficients are calculated and normalized as shown below:

$$\sum_{i=1} a_i=1, a_i\geq 0, i=1,2,...,n \tag{4.10}$$

⑤Synthetic fuzzy integrated evaluation result vector

Perform matrix synthesis operations:

$$B=(a_1,a_2,...,a_p)\begin{bmatrix} r_{11} & r_{12} & \cdots & r_{1m} \\ r_{21} & r_{22} & \cdots & r_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ r_{p1} & r_{p2} & \cdots & r_{pm} \end{bmatrix}=(b_1,b_2,...,b_m) \tag{4.11}$$

⑥Analyzing the results of the fuzzy integrated evaluation

In the face of practical problems, the principle of maximum affiliation is often applied to analyze the calculation results of fuzzy comprehensive evaluation, however, because the data collection in the process of model building comes from subjective evaluation, the calculation results may have some unreasonable situations. In this regard, we choose to use the method of weighted average to find the affiliation level to quantitatively analyze the final evaluation results.

$$S=(a_1,a_2,...,a_p)\begin{bmatrix} b_{11} & b_{12} & \cdots & b_{1m} \\ b_{21} & b_{22} & \cdots & b_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ b_{p1} & b_{p2} & \cdots & b_{pm} \end{bmatrix}=(s_1,s_2,...,s_m) \tag{4.12}$$

Evaluation Vector for Symptom Management

$$\begin{aligned} B_1 &= (0.7545,0.0919,0.1535)\begin{bmatrix} 0.092595 & 0.364935 & 0.498895 & 0.043575 \\ 0.06282 & 0.3466 & 0.41629 & 0.17439 \\ 0 & 0.357045 & 0.45755 & 0.185405 \end{bmatrix} \\ &=(0.075636,0.362002,0.484907,0.077363) \end{aligned} \tag{4.13}$$

Evaluation vector for psycho-spiritual support

$$\begin{aligned} B_2 &= (0.6232,0.1373,0.2395)\begin{bmatrix} 0.00708 & 0.22834 & 0.480895 & 0.283785 \\ 0.12132 & 0.331285 & 0.460025 & 0.08737 \\ 0.20528 & 0.363595 & 0.392875 & 0.03815 \end{bmatrix} \\ &=(0.070234,0.274868,0.456949,0.197988) \end{aligned} \tag{4.14}$$

Evaluation vector for service management mechanisms

$$\begin{aligned} B_3 &= (0.539,0.1638,0.2973)\begin{bmatrix} 0.06333 & 0.227857 & 0.291447 & 0.295133 \\ 0.04612 & 0.378125 & 0.514985 & 0.06077 \\ 0.020655 & 0.43119 & 0.464345 & 0.08381 \end{bmatrix} \\ &=(0.04783,0.312944,0.379494,0.193948) \end{aligned} \tag{4.15}$$

In turn, the fuzzy affiliation matrix of the first level indicators can be obtained as

$$R=\begin{bmatrix} 0.075636 & 0.362002 & 0.484907 & 0.077363 \\ 0.070234 & 0.274868 & 0.456949 & 0.197988 \\ 0.04783 & 0.312944 & 0.379494 & 0.193948 \end{bmatrix} \tag{4.16}$$

The analytic hierarchy process is used to find the weight vector of the first-level indicator as

$$W=(0.539,0.1638,0.2973) \tag{4.17}$$

The weights of the level 1 indicators and the fuzzy affiliation matrix of the level 1 indicators

$$B=WR=(0.066492,0.333181,0.449037,0.13179)$$

are multiplied to obtain the overall evaluation vector

(4.18)

Based on the target level evaluation vector and the rank score vector, the evaluation score was calculated using F=VBT. After calculation, the overall rating value is

$$F = VB^T = \begin{bmatrix} 100 & 75 & 50 & 25 \end{bmatrix} \begin{bmatrix} 0.066492 \\ 0.333181 \\ 0.449037 \\ 0.13179 \end{bmatrix} = 57.38437 \tag{4.19}$$

The overall rating is 57.384, which is between pass and good. The final results are detailed in Table 4.7.

Table 4.7 Fuzzy comprehensive evaluation results

Indicator	Score
Pain control	63.75
Other symptom control	68.75
Symptom dynamic assessment mechanism	57.5
Nursing guidance	71.25
Non-drug treatment	47.5
Specific nursing	71.25
Pharmaceutical administration	68.75
Nursing guidance	52.5
Medical consulting service	50
Psychological assessment	47.5
Intervening measure	46.25
Peer support	62.5
Spiritual needs assessment	81.25
Death education	60
Dignity maintenance	58.75
Life review	73.75
Vital file	56.25
Emotional support	63.75
Communication and coordination mechanism	50.83
Service skills assessment	36.67
Rules and regulations	34.17
Training and education	55
Hardware facility	66.25
Humanistic care	65
Third-party support	63.75
Professional evaluation	55
Satisfaction evaluation	67.5
Service file management	62.5
Symptom control	62.67
Comfortable nursing	57.46
Care support	54.30
Psychological support	48.98
Spiritual care	62.17
Narrative medicine	68.40

Teamwork	45.37
Service assurance	60.24
Service effectiveness evaluation	59.72
Symptom management	60.89
Psycho-spiritual support	55.44
Service management mechanism	52.08

4.3.3 Optimizing the management model of hospice service team for advanced cancer patients in public hospitals

This study used a fuzzy comprehensive evaluation method to comprehensively assess the quality of hospice service, and the assessment results were between average and better. According to the final scores of the indicators at all levels, the relatively low score of the first-level indicators was the service management mechanism, the second-level indicators were teamwork and psychological support, and the third-level indicators contained regulations, communication and coordination mechanisms, service skill assessment, interventions, non-pharmacological treatments, psychological assessment, and medical consulting services. It reveals the weaknesses of the hospice service in hematology-oncology department in several key areas, especially in the service management mechanism and the level of professional competence. Combined with the actual operation of the hospice service team, this study proposes a four-pronged optimization and improvement plan for the existing management mechanism, and strives to construct a systematic and normalized hospice service management model for advanced oncology patients in public hospitals that meets China's actual medical needs.

4.3.3.1 Dynamic assessment of patients' individualized needs

Identifying the interests of service subjects is a prerequisite for hospice care services .The practical survey results of this study show that both patients and supporters have cognitive differences in their appeals, on the one hand, the service subjects lack understanding of the essential demands behind the problem, it is difficult to correctly judge what their own demands are, on the other hand, the attention to their own demands is not high, and the collectivist value concept makes individuals consider the demands of others more. For example, some family members often focus on the patient's condition, and do not pay much attention to their own care pressure and psychological pressure. Some medical staff have psychological distress and often choose to digest themselves and avoid infecting others with negative emotions until they exceed their own tolerance limits.

Exploration of the humanistic ward rounds system. Humanistic care is the core of the concept of hospice service, traditional ward rounds are only participated by doctors, mainly to evaluate patients' clinical symptoms and treatment effects, humanistic rounds are centered on patients and their families, with a multidisciplinary collaboration mode, multi-perspective, all-round record of hospice service. A new way of making ward rounds led by doctors, nurses and social workers in the hospice service team, assisted by other members. Specific content: First, the collection of information such as the patient's basic situation, physical function status assessment, purpose of admission, and existing needs. The second is to build a relationship of trust with patients and primary caregivers through humanistic care. The third is to apply the needs assessment tool to carry out phased dynamic assessment of the patient's quality of life, and conduct the process evaluation of the effectiveness of hospice service.

Based on the humanistic ward rounds system, clarify the demands of patients and primary caregivers, and formulate hospice service plans and goals. First, because hospice service is extensive, the principles of the plan include respecting the patient's last wishes; Identify what needs are most important and need to be solved; What issues are most pressing at the moment; What requirements are the easiest to implement, that is, have high feasibility. Secondly, clarify the service-related supporters involved in the implementation of the service plan, and the team leader will sort out the interests demands of various stakeholders and their mutual interests.

4.3.3.2 Subgroup management mechanisms

According to the results of the third chapter, the hospice team of advanced cancer patients in public hospitals is composed of deterministic stakeholders and anticipatory stakeholders, namely families, nursing staff, hospital administrators, government functional departments, patients, social workers, social service organizations, universities/scientific research institutions, among which government functional departments, social service organizations, universities/scientific research institutions, and others, are designated as hospice service team guidance experts. Medical social workers are responsible for resource coordination, linking potential stakeholders according to service needs, namely: community hospitals, media, associations, online crowdfunding platforms, charitable foundations, commercial insurance, psychological counselors, rehabilitation therapists, nutritionists, volunteer groups, and peer groups.

Obviously, hospice is a complex service system, and a clear division of roles and positioning is the basis for achieving regular service management. However, under the current model, nurses often wear several hats, not only needing to interface with patients and their families who are highly mobile and have different needs, but also undertaking a large number of coordination and management tasks. This "all-around role" not only prevents nurses from giving full play to their professional abilities, but also leads to difficulties in teamwork and communication, and service management is characterized by fragmentation and non-systematicity. How to deal with the teamwork problems in the development of hospice service at this stage? The introduction of grouping management strategy is imperative. The core of grouping management is to divide large organizations or tasks into smaller, more manageable units, and to refine broad management responsibilities into specific, actionable tasks (Lv et al., 2020). By clarifying the roles and responsibilities of each group, it is possible to ensure that group members maximize their effectiveness in their respective areas of expertise. At the same time, team-based management emphasizes interaction and collaboration among members, which not only helps to improve the accuracy and timeliness of information transfer, but also significantly enhances the effectiveness of the team in decision-making and execution. In addition, team-based management provides a platform for team members to learn and grow together. Within the team, members can learn from each other's experiences and discuss solutions to problems, thus promoting the improvement of the team's overall knowledge and skills. This type of management is essential to stimulate the enthusiasm and creativity of team members, helping to create a dynamic and efficient team, and providing a strong guarantee for the continuous improvement of hospice service quality.

Based on the results of Meng et al.'s (2020) empirical study, this study defines medical social workers as the executors of team operation management, assumes an active and promoting role, dynamically grasps the problems and needs of service targets and service support, analyzes the reasons, links resources based on needs, and establishes a support system to ensure the implementation efficiency and implementation value of service plans and goals. Construct a "1+X" grouping management mechanism, with "1" referring to medical social workers and "X" referring to grouping based on the content of hospice service, consisting of professionals from various disciplines. Through the formation of professional groups, individual interests are coalesced into group service demands, and the interests of various disciplines, departments, and organizations participating in hospice service are managed in groups. As shown in the Figure 4.1:

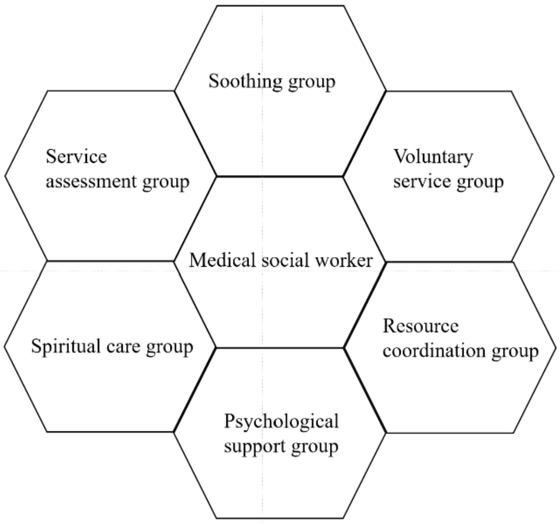

Figure 4.1 "1+X" grouping management mechanism

4.3.3.3 Professional Training and Competence Enhancement

Based on the analysis of the interview study, combined with the results of existing studies, it is not difficult to find that in the field of hospice service, the insufficient level of professional competence has become a key factor restricting the improvement of service quality. How to deal with the problem of insufficient level of professional competence in hospice service? This problem is mainly manifested in the lack of systematic pre-service and in-service training for relevant personnel, which leads to their insufficient understanding of the hospice needs of terminal patients and makes it difficult for them to provide comprehensive and high-quality care services. Based on the previous research and analysis, this study summarizes the causes of the problem into three points: First, the imperfection of the training system: at present, the training system of hospice service has not yet formed a standardized and systematic mechanism, and there is a lack of customized training content for different roles. Second, the lack of resources and professional guidance: the hospice service field lacks sufficient professional educational resources and practical guidance, and relevant personnel are difficult to obtain the latest knowledge and skills. Third, lagging concepts of death education: influenced by traditional culture, healthcare professionals and the public hold avoidance attitudes toward death and hospice care, resulting in the absence or insufficiency of death education in hospice training.

Based on this, the optimization plan proposed in this study is summarized in four points: first, the introduction of diversified training methods, such as case analysis, role-playing, and simulated practical exercises, and corresponding to the establishment of a mechanism for evaluating the training effect, which regularly tests and evaluates the knowledge and skills of practitioners, to ensure that the results of training are applied. Secondly, integrating professional resources and practical guidance, and establishing an expert pool and consultation platform for hospice service in conjunction with each pilot hospital of hospice service, so as to provide professional guidance and support. Third, strengthening death education and bioethics education, inviting experts in the fields of ethics and psychology to provide training on death education and psychological support for practitioners, in order to enhance their ability to face death and loss. Fourth, an incentive and recognition mechanism to motivate practitioners to continuously improve their professional competence and service level through the establishment of awards and the provision of career development opportunities. With the improvement of the training system, the change of the concept of death education, and the integration and optimization of professional resources, hospice service will play a greater role in enhancing the quality and dignity of patients at the end of life. At the same time, this also requires the joint participation and support of the government, medical institutions, social organizations and the public to jointly promote the development of hospice care.

4.3.3.4 Service effectiveness evaluation mechanism

The evaluation of hospice service in public hospitals consists of four parts: needs assessment, service dynamic evaluation, service effectiveness evaluation and Establishment of life service records.

Needs assessment. Use evaluation tools, such as symptom assessment scale, psychological assessment scale, social needs scale, and spirituality scale, to assess patient life expectancy, combined with narrative medical methods, to fully understand the hospice service needs of patients with advanced cancer.

Service dynamic evaluation. Service planning development: Through family meetings, intra-team meetings, and others, patients and primary caregivers work with the hospice service team to develop a personalized service plan. The "List of Hospice service for Advanced Cancer Patients in Public Hospitals" was used to dynamically evaluate the hospice service process, understand the service implementation progress and the difficulties encountered in the process, and make timely adjustments. For example, pain assessment: evaluate the pain and make a preliminary analysis of the factors affecting the pain, and make corresponding records. The dose titration of the pain medication is completed within three days of admission, and pain assessment is performed every three days.

Service effectiveness evaluation. The supervision and experts of the hospice service team enjoy the right to view all service records, through reviewing service records, interviewing relevant service personnel, visiting patients and their families, understanding the implementation of service measures one by one, and guiding the existing problems, dynamically evaluating the service quality, and the evaluation results are included in the year-end assessment of team members. As shown in Table 4.8.

Table 4.8 List of hospice care services for advanced cancer patients in public hospitals (example)

Service object	Service support side	Existing appeal	Measures adopted	Whether it has been solved and the difficulties that exist
Lung cancer patient: Mr. Wang	Medical Social Worker, Medical University Teacher (Supervisor)	Patients hope to donate their bodies to medical schools after their death, hoping to receive the understanding and support of their families.	Hold family meetings to communicate and understand the ideas and demands of family members, and conduct popular science education on medical research.	The family ultimately supported the patient's decision and agreed to sign the donation agreement.

Establishment of life service records. Through the creation of "life files", the content and connotation of the team's services are truly feedback, and the hospice service behavior is standardized. The examples of the "life files" are shown in the Annex D.

4.3.4 Construction of a hospice service model for advanced cancer patients in public hospitals

Existing research has widely recognized the significant role of multidisciplinary teams in improving the quality of life of terminally stage patients, a view that is also clearly reflected in China's national hospice service guidelines. However, how to effectively implement hospice multidisciplinary service teams based on local healthcare management mechanisms remains a problem to be solved. This study combines the hospice service index system and the practical experience of the Department of Hematology and Oncology over the past ten years, and based on group management, further utilizes the characteristic advantages of the case management model and closely integrates it with the hospice multidisciplinary team, so as to construct a regular working mechanism of the hospice service team for advanced cancer patients in public hospitals. This mechanism is designed to ensure that patients with advanced cancer receive comprehensive, continuous and efficient hospice care.

Based on the case management model, the service management team is able to meet the individual needs of patients with greater precision, while optimizing resource allocation and enhancing service efficiency. The combination with the multidisciplinary team further strengthens the professionalism and comprehensiveness of the service, ensuring that patients can receive the best care and support in the last stage of their lives. The hospice team working mechanism for advanced cancer patients in public hospitals proposed in this study is a useful exploration and innovation of the existing hospice service model, and it is expected that this mechanism can be widely applied and verified in practice, bringing benefits to more advanced cancer patients.

Case management has the advantage of being able to better integrate various resources and link a variety of medical services and social services, and provide holistic and continuous care services for service recipients through the integration of resources and services (Wu et al., 2016). The American Association for Case Management divides the case management workflow into six steps, including evaluation, planning, implementation, coordination, monitoring and evaluation. The case manager evaluates the interests of patients and related parties through a variety of ways and channels, clarifies the various resources that can be coordinated, formulates the case management service plan, and implements the service plan according to the plan, focusing on coordinating the resources of all parties in the process of service, so as to improve the utilization rate of resources and reduce service costs. Throughout the service process, experts such as supervisors will carry out quality control of service management, emphasizing the importance of service evaluation to services. The researchers believe that case management service is different from traditional medical services, which is a kind of administrative care service, involving multiple disciplines, focusing on coordination and cooperation between various stakeholders in the service process, focusing on integrating resources and providing services, and achieving the goal of improving cost-effectiveness and improving service quality (Yang et al., 2021). The combination of case management mechanism and multidisciplinary team management of hospice care services is conducive to maintaining the stability of hospice service management structure.

A model for managing hospice service for advanced cancer patients in public hospitals. First, by establishing a deep relationship of trust with the patient, the foundation is laid for the subsequent comprehensive assessment. The assessment covers not only the patient's perceived level of illness and family financial situation, but also their subjective needs such as psychological needs and resource barriers they face, as well as the views of family members and medical staff. Next, the case manager invites the patient and their primary caregiver to participate in the development of an individualized hospice plan. Throughout this process, the patient's wishes are respected and the focus is on their most immediate needs and life-threatening issues, as well as ensuring the plan's feasibility and appropriateness. To ensure the smooth implementation of the plan, the service team strives to find the best way to access the most effective resources and works to remove all possible barriers. Along with resource consolidation, the implementation of the plan is continuously monitored through the establishment of monitoring indicators. When the hospice service comes to an end, the case manager will work closely with and give feedback to the patient, medical staff, primary caregiver, as well as the community and health care agencies, and others., in order to summarize and evaluate the effectiveness of the service, and to set up a set of long-term operation mechanism.

On this basis, in order to further optimize the quality management of hospice care services in public hospitals, the PDCA cycle management concept, also known as the "Deming ring", proposed by American quality management expert Walter A. Shewhart, is used to optimize the quality of hospice care services. The PDCA cycle consists of the first letter of the English words Plan, Do, Check, and Act, and the PDCA cycle performs quality management in this order, and the cycle continues on the scientific process. P(Plan) plan, including the determination of policies and objectives, as well as the development of activity planning. D (Do) Implementation, based on known information, design specific methods, schemes and plan layouts; According to the design and layout, the specific operation is carried out to realize the content of the plan. C (Check) checks, summarizes the results of the implementation plan, distinguishes what is right and what is wrong, clarifies the effect, and identifies the problem. A (Act) processing, processing the results of summary inspections, affirming successful experiences, and standardizing them; The lessons of failure should also be summed up and paid attention to. For unsolved problems, submit to the next PDCA cycle to solve the above four processes are not run once and end, but cycle after a cycle, one cycle is finished, some problems are solved, and unsolved problems enter the next cycle, in a stepwise manner (Tang et al., 2015). A diagram of the hospice team's working model is shown in the Figure 4.2:

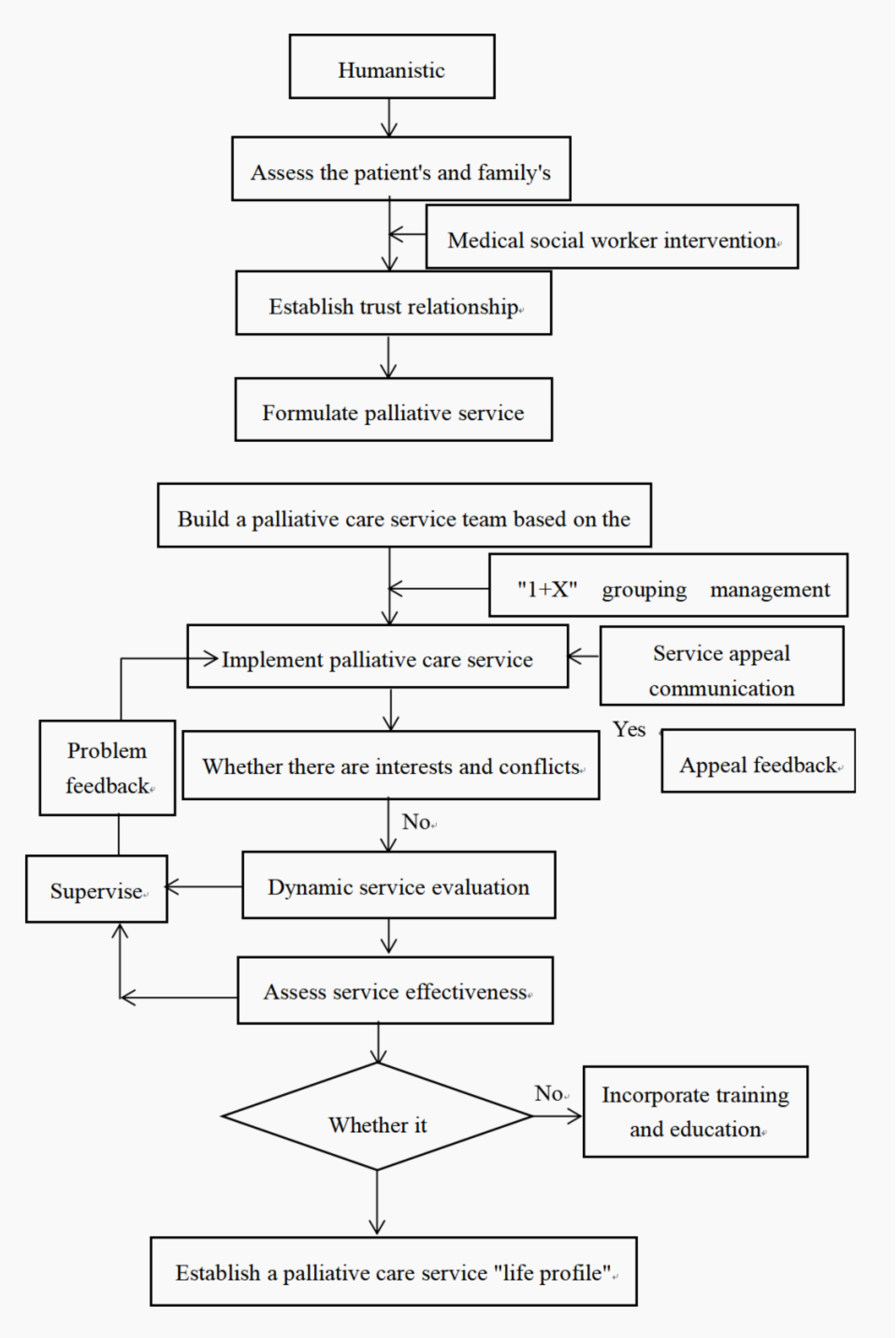

Figure 4.2 The working model of the hospice service team

Chapter 5: Research Conclusion and Prospect

5.1 Research conclusions

5.1.1 Stakeholder theory is of great practical significance for the development of multidisciplinary hospice care model in public hospitals

Based on the hospice care service concept and the current relevant policies in China, the development of hospice care services is in line with the Chinese government's Outline of the “Healthy China 2030 Plan”, which means that the next decade is an important opportunity for the localized development of hospice care services. In recent years, hospice care has been paid more and more attention by the society and the government, and various medical institutions have explored new modes of service and practice. As the main provider of medical services, public hospitals have significant advantages in medical resources and medical services due to their organizational nature. The development of hospice care services in public hospitals is not only the demand of patients, but also the objective need of the development of hospice care services. Exploring hospice care services in public hospitals has important guiding value for other medical institutions to develop hospice care services.

From the perspective of stakeholder theory, the goal of an enterprise should not be limited to maximizing the interests of its shareholders, but should more broadly consider the interests of multiple participants with whom it has an interest. These stakeholders include not only business managers, suppliers, customers, creditors, but also employees, communities and even government departments. In China, the application of stakeholder theory has been gradually emphasized in the discussion of governance structure change in public hospitals. Feng et al. (2007) provided an in-depth analysis of the core content of the theory and discussed its importance in public hospital governance. Subsequently, Dr. Wu (2008) of Renmin University of China further confirmed the necessity and possibility of introducing stakeholder theory in public hospitals, thus establishing that public hospitals can also be regarded as a self-initiated benefit-sharing platform formed by different resource allocators in pursuit of synergistic effects.

In the development of hospice service in public hospitals, different types of stakeholders demonstrate diverse demands for services, and there are significant differences in the degree of attention paid to these demands. These differences lead to both the possibility of synergistic cooperation and the inevitable emergence of conflicts of interest among stakeholders. Based on the stakeholders' demands and interests, this study constructed a series of management measures, including the "1+X" personnel dynamic management mechanism, communication and feedback mechanism, and other management measures, which are committed to optimizing the multidisciplinary service model of hospice care in public hospitals. Through continuous exploration, introduction, practice, validation and revision, the hospice multidisciplinary service model we have developed has achieved remarkable results in practice. This not only provides a useful reference for the introduction and development of hospice care within public hospitals, but also provides a service and management model for other hospitals to learn from and promote, thus helping to promote the wider development of hospice care across the country.

5.1.2 The pivotal function of communication coordination in optimizing the quality of hospice service management

Communication mechanisms are key to resolving interest claims and conflicts: they encompass communication skills, communication between doctors and patients, and communication between multidisciplinary teams. In an interview study of hospice service in a hematology-oncology department, it was found that there is a contradiction between supply and demand in the practice of hospice care. The hospice service provided at this stage basically take into account symptom control, comfort care, care support, psychological support, spiritual support, narrative medicine, teamwork, service guarantee, service evaluation, and others. However, the integrating degree between these services and the actual needs of the patients is not high, showing a mismatch between supply and demand, and a lack of relevance and rationality. For example, at the current stage, hospice service has covered multiple dimensions such as symptom control, comfort care, care support, psychological and spiritual support, narrative medicine application, teamwork, service assurance, and service evaluation. Specifically, although hospice emphasizes the holistic care of patients, the importance of demand interaction is often overlooked in actual implementation. For example, although the companionship of volunteers is an important social support for patients, because volunteers often have insufficient understanding of the needs of patients with advanced tumors, they may over-express empathy when providing services, which in turn increases the stigma of some patients with more sensitive personalities, which in turn may cause some harm to the dignity of patients. This phenomenon not only reveals the necessity of professional training for service providers, but also highlights the critical role of teamwork and communication in optimizing hospice service. Combined with the results of existing studies, this type of mismatch between supply and demand is more prevalent in the pilot hospitals.

Therefore, the formulation of hospice service plans should be based on the demands of different stakeholders and timely feedback based on communication and coordination to provide targeted and rational hospice service to improve the utilization of resources and hence the quality of services. For example, the family conference has been shown to be a highly effective way of hospice practice, not only as an occasion for healthcare professionals to convey information about the disease to patients and their families, but also as an important part of assessing their needs, providing emotional comfort, and discussing and negotiating goals and strategies of care. The central aim is to establish closer communication with terminally ill patients and their families, encouraging them to make constructive suggestions and work together to solve their challenges, while Hope et al.'s (2000) study focuses on the information received by cancer patients and their actual needs, and accordingly constructs a framework for patient-centered information strategies that highlights the centrality of patients' information needs. The study further emphasizes the integral role played by information delivery in the interaction between different stakeholders. It not only ensures that the service process runs smoothly, but also significantly increases the motivation and commitment of all parties involved.

5.2 Limitations and prospects

5.2.1 Limitations of the study

First, because the experts selected in this study are all from Wenzhou, there may exist a defect of regional concentration of experts.

Second, the interviewees in this study are only limited to the Affiliated Hospital of Wenzhou Medical University, and the number of interviewees is relatively small. In the future, the interview area can be expanded to enrich the disease categories of terminal stage patients, and the number of interviewees can be increased to make the analysis of interview results more comprehensive.

Third, the constructed evaluation index system has not been verified by big data, and its effectiveness and popularization need further empirical exploration.

5.2.2 Prospects for future research

The construction of the index system of hospice service for patients with advanced tumors in public hospitals and its evaluation method provides a scientific and reliable tool for standardizing the evaluation of hospice service, especially in the context of the reality that the quality of hospice service is at a low level at the present time, the use of the index system can fully reflect the connotation of the hospice service, assess the strengths and weaknesses in the process of carrying out the services, optimize the deficiencies in the hospice service, so as to improve the effectiveness of the service. This study has explored the comprehensive evaluation of the quality of hospice service in public hospitals, but it has only been carried out in the Affiliated Hospital of Wenzhou Medical University. The next step is to improve the indicator system, expand the scope, and further validate the scientific, objectivity, and operability of the indicators.

As a crucial part of healthcare services, public hospitals play a pivotal role in the hospice field. Based on in-depth analyses of existing development pathways, the future direction of hospice care is gradually shifting to the community and the family. In this context, when exploring the multidisciplinary service model of hospice care, public hospitals should actively work closely with neighbouring primary and secondary care institutions. By inviting medical and nursing staff from these organisations to the department for further training and learning, providing professional guidance on ward construction, and carrying out targeted staff training and technical support, a highly effective three-tiered hospice linkage system can be jointly explored and established. Such a system closely links hospitals, communities and families to form a three-in-one service model, thus providing patients with more comprehensive and continuous hospice service.

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Annex A: Interview Outline

Part One: Hospital Administrator

1. Do you know anything about hospice care?

2. If yes, what do you think is the possibility of establishing hospice wards (units) in public hospitals?

3. In your opinion, can hospice nursing be popularized and applied in China?

4. As for the development of the concept of hospice nursing, what do you think are the difficulties, what are the biggest obstacles, and are there any solutions?

5. Based on the current hospital management system, if hospice care team is established, what are the difficulties or obstacles in human resources? What are the difficulties in hospital management mechanism?

6. As far as you know, are there any "two-way referral" or medical combination for hospice care services carried out at present?

Part Two: Chief of Department

1. Do you think it is necessary to set up hospice wards in hospitals? What are the difficulties in establishing hospice care units and what are the biggest obstacles?

2. For the management of hospice care services, from the perspective of the competency of medical staff, do you think the medical staff can meet the requirements to manage hospice care services?

3. If the 1-10 numbers are used as quantitative scales, what do you think is the job saturation or load of nursing staff in your current department?

4. Do you agree to some social support for patients in the hospice wards, for instance, volunteer activities or interviews?

Part Three: Nursing Staff

1. Have you ever participated in hospice care services? What is the concept of hospice care in your opinion?

2. If hospice care is provided in the hospital, are you willing to participate in it?

3. In daily care services, will you consciously understand the specific situation of the patient's family, religious belief and (or) other aspects?

4. What do you think is the most difficult thing in daily nursing service, for example,

illness notification, communication?

5. On the basis of conventional nursing, can nursing staff take into account both the humanistic ethical and emotional needs of patients?

6. With the current operation pattern of the medical department, doctors and nurses are responsible for treatment and nursing respectively. Do you think that, to a certain extent, non-nursing work will occupy the nursing time and energy of caregivers in the practice of hospice care?

7. What are your views or thoughts on social workers' participation in hospice care?

8. Using 1-10 numbers as a quantitative scale, what number do you think is the cognitive level of patients to their own diseases?

9. In your past nursing experience, do patients' needs for psychological support and counseling exist generally? Will they be willing to receive counseling and treatment? How do they respond to psychotherapy?

10. Which patients will receive hospice care? Who make decision for that?

11. Are there any admission criteria for hospice patients, for instance, signing an agreement not to carry out rescue treatment? Are there any specific requirements for team participants, including but not limited to working years, professional expertise?

12. How many patients are receiving hospice care in your department currently?

13. Is there any financial support for hospice care services? What is the status of the use of funds? What are the financial difficulties?

14. What are the specific tasks performed by each role in hospice care?

15. Please talk about your feelings about your experience of hospice care in the past two years?

16. What do you focus on in the process of nursing (or managing) patients with advanced tumors?

17. What difficulties do you encounter in the process of nursing (or managing) patients with advanced tumors?

18. What problems do you think exist in the current nursing process of patients with advanced tumors?

19. What do you think should be included in the quality evaluation of hospice care for patients with advanced cancer?

Part Four: Patients

1. How much do you know about your disease?

2. What did you think after diagnosis?

3. How do you understand your current illness?

4. Have you met with any problems since you were diagnosed?

5. (If yes, the interviewee can talk about the difficulties, how to deal with them and what the most painful part is.) What kind of care and support would you most like us to provide?

6. Have you left any regrets? Have you got any wishes requiring our assistance to help accomplish? (If so, ask the interviewee to talk about specific regrets or wishes)

7. With the progress of the disease, have you thought about how to arrange things in the future? (If they need, the interviewee can talk about what help they need from us)

8. What kind of person would you like to be? (Ask the interviewee to talk about life and death if necessary)

9. In the journey of life, what do you think is the most important? (Ask the interviewee to talk about why it's important, if necessary)

10. Do you have any supplementary requirements?

Part Five: Family Members of Patients

1. Will you choose to tell the patient after you know the diagnosis?

2. Using 1-10 numbers as a quantitative scale, how is the relationship between you and the patient?

3. Do you believe in the professional skill level and treatment ability of medical staff?

4. Do you think the charging policy of the hospital is reasonable?

5. Do you think it is necessary to obtain the consent of patients before implementing the treatment plan? Or would it be more appropriate for the family to decide?

6. Do you need the support of your family doctor during home care?

7. Do you think medical staff treat every patient equally?

8. During hospitalization, did the medical staff answer the questions about the development of the disease and the treatment plan?

9. During the treatment, did the medical staff choose the treatment plan according to the economic situation?

Part Six: Third-Party Public Welfare Organizations

1. To participate in hospice care services, do you prefer project cooperation or setting up branches of third-party institutions?

2. What obstacles do public welfare organizations currently face in participating in hospice care?

3. What do you think is the significance of participating in hospice care?

4. What are the requirements for public welfare organizations to provide hospice care services, including but not limited to, the amount of capital to be invested, the number of personnel, incentive measures.

Part Seven: Government Departments

1. Do you agree with the concept of hospice care?

2. In your opinion, what are the difficulties facing the implementation of hospice care policy?

3. From a policy perspective, what will promote the development of hospice care?

Annex B: Hospice Care Service Stakeholders in Public Hospitals

Stakeholder	Description of benefits
Patients	The demand side, the beneficiaries of hospice service, want hospice service
Dependents	The Demand side and the supply side, providing care services for patients
Peer group	Supporters, who provide emotional support as well as some financial support to patients and their families
Nursing staff	The service providers, who provide medical care based on the patient's physical state
Hospital administrators	The right party, who manages the hospice service
Government function	The right party, who rationalizes hospice-related policy measures, including financial allocations, maintain their credibility and voice.
Social service organizations	Service providers, based on their own human and social resources, to provide patients with the required social support services
Universities/research institutes	Supporting parties, conducting research on theories and practices related to hospice service, and providing guidance services on the development of hospice service
Voluntary organizations	Service providers, providing supportive services such as companionship and medical treatments for patients, while at the same time recognizing the value and importance of life.
Caseworker	Service Provider, coordinator of resources for the delivery of hospice service, providing supportive services based on the needs of patients and families
Community hospitals	Service Provider, which provides basic symptom control services for people with advanced cancer and adds some revenue to the service
Media, esp. news media	Influencing social perceptions of hospice service with resources such as public opinion and knowledge
Foundation	Supporters, based on their own platforms, provide social support for the development of hospice care
Online Crowdfunding Platform	A supporter that raises targeted charitable donations from the general public by means of online crowdfunding and receives an honorarium for doing so.
Charitable foundation	Supporters, to provide special financial support for advanced cancer patients, to alleviate the financial pressure of patients and their families, to reflect the social value of the Foundation, and to enhance social credibility.
Banks	Supporters, providing financial support
Commercial insurance	Demonstrating the economic value of commercial insurance and promoting the development of commercial insurance in the medical field
Psychological counsellor	Service providers, provide psychological counseling services, regulates the emotional state of the stakeholders, and obtains a certain honorarium.
Physiotherapists	Service provider, providing guidance on rehabilitation of somatic functions such as massage and orthopedics, and receiving a certain amount of honorarium
Dietitians	Supply side, improving malnutrition in advanced cancer patients, providing dietary guidance, and conducting related scientific research studies
Chaplain	Supporting parties, providing supportive services such as prayer, meeting the needs of advanced cancer patients in terms of their religious beliefs and upholding their own social and humanistic values

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Annex C: Expert Questionnaire

Dear expert,

We are conducting academic research aimed at soliciting your advice on the feasibility of carrying out hospice care service in governmental hospitals. In consideration of your expertise in this field, we cordially invite you to be consultant expert of the project. With the development of medical technology, early and mid-term cancer patients are effectively treated. However, the needs for care of advanced cancer patients are still difficult to get support and their quality of life is low. The governmental hospital is the main body of Chinese medical service system, providing curative medical services for advanced cancer patients in the traditional biomedical model. The concept of hospice care service originated from modern medicine in western medicine and provides supportive medical services based on the biological- psychological-social medical model. In view of this, as an imported goods, the development of hospice care service in governmental hospitals is facing the problem of embeddedness. The implementation of hospice care services in governmental hospitals involves the adjustment of many medical resources and the medical service process is entangled with multiple interest groups. This study intends to provides supportive medical services for advanced cancer patients through the communication and coordination, transfer of interests and responsibility sharing among stakeholders. Therefore, it's particularly import to accurately identify the stakeholders of hospice care services and their interest demands. The purpose of this study is to build a scientific and standardized team management scheme that can guide the implementation of hospice care services, which is based on the characteristics of demand for the stakeholders of hospice care services for advanced cancer patients.

This questionnaire is about the main content of "hospice care services for advanced cancer patients in governmental hospitals", which is divided into three parts: the first part is the questionnaire on determination of stakeholders in governmental hospitals; the second part is the questionnaire about the content of hospice care services in governmental hospitals; the third part is about the situation of experts. The information obtained from the questionnaire will only be used for research purposes. The personal information you provide will be kept in strict confidence. On the basis of interview analysis and literature review, researchers refer to many foreign guidelines and domestic *Hospice Practice Guidelines* to form a "hospice care service index system for advanced cancer patients in governmental hospitals". In terms of the coverage of indicators and the importance of the content of the scheme, experts' further guidance and valuable suggestions are still needed. Please fill it out according to your real thoughts. Due to the timeliness of the study, we hope to get your reply within a week. We sincerely hope that you can put forward your valuable opinions. Thank you very much for your support and help. Wish everything goes well with you.

Part I

Determination of Stakeholders in Governmental Hospitals

Form-filling guides:

Hospice care service stakeholder refers to individuals, groups and institutions that participate in hospice care services and have certain interest demands, can affect the quality of hospice care services to varying degrees, or are affected by the implementation of hospice care services. The purpose of this consultation is to determine the stakeholders involved in the implementation of hospice service and their importance. Please mark " √ " in the corresponding form according to your own judgment. If there are candidates for hospice care service stakeholders that need to be added, please add them in the space below.

Table C1 Determination of Stakeholders

Hospice care service stakeholder	importance				
	very unimportant	less important	important	more important	very important
patients					
dependents					
Peer group					
Nursing staff					
Hospital administrators					
Government function					
Social service organizations					
Universities/research institutes					
Voluntary organizations					
Caseworker					
Community hospitals					
Media, esp. news media					
Foundation					

Online Crowdfunding Platform
Charitable foundation
Banks
Commercial insurance
Psychological counsellor
physiotherapists
Dietitians
Chaplain

Annotations:

①peer group: including teachers,friends and schoolmates and other personal social relationship groups

②medical staff: including doctors, paramedics and caregivers and other medical service providers

③hospital administrator: including department director and leadership and other hospital administrator

④ including medical insurance relalted departments, such as medical insurance for urban workers and rural cooperative medical insurance, as well asrelevant functional departments of financial grants

⑤non-profit organization: social organizations that not for the profit, including foundations, the benevolent and charity service organizations

⑥colleges and universities /scientific institution: mainly refers to the training and guidance provided by medical colleges and agency for research on cancer

⑦voluntary group: can be divided by college voluntary groups and social voluntary groups

⑧social worker: mainly refers to medical social worker and supervisor who guide the work

⑨health administration department: such as department of health committee, education department, civil affairs department, human resources and social security department, development and reform commission

⑩for-profit organization: social organization that for the profit, including commercial insurance institutions, social fundraising platform, social rehabilitation institutions and other for-profit organizations

If you have any other suggestions about the research, please fill in here:

Part II

Classification of stakeholders

Mitchell proposes an assessment framework that scores potential stakeholders on three dimensions: legitimacy, power, and urgency. Through this assessment, the importance of a stakeholder can be quantified and the resulting score can be used to determine whether a stakeholder is a core stakeholder of the organization. This scoring mechanism not only provides a systematic means of identification, but also helps managers to more clearly identify and prioritize those stakeholders that have a significant impact on the organization in the decision-making process.In this study, the three dimensions of entitlement (whether or not a stakeholder has the status, ability, and appropriate means to influence the quality of hospice services), legitimacy (whether or not a stakeholder group's demands for participation in, or solicitation of needs from, hospice services are in accordance with legal and moral requirements), and urgency (whether or not a stakeholder group's demands can be brought to the attention of the hospice's relevant administrators immediately) were The three dimensions are assigned values on a 5-point scale. A score of 5 indicates the strongest level of entitlement, legality, or urgency, followed by a score of 4, and a score of 1 indicates the weakest level of entitlement, legality, or urgency. Please tick the appropriate box according to your own judgement.

Table C2 Stakeholder rights dimension judgements

Hospice care service stakeholder	importance				
	very unimportant	less important	important	more important	very important
patients					
dependents					
Peer group					
Nursing staff					
Hospital administrators					
Government function					
Social service organizations					
Universities/research institutes					
Voluntary organizations					
Caseworker					
Community hospitals					
Media, esp. news media					
Foundation					
Online Crowdfunding Platform					
Charitable foundation					
Commercial insurance					
Psychological counsellor					
physiotherapists					

Dietitians					

Table C3 Stakeholder legitimacy dimension judgement

Hospice care service stakeholder	importance				
	very unimportant	less important	important	more important	very important
patients					
dependents					
Peer group					
Nursing staff					
Hospital administrators					
Government function					
Social service organizations					
Universities/research institutes					
Voluntary organizations					
Caseworker					
Community hospitals					
Media, esp. news media					
Foundation					
Online Crowdfunding Platform					
Charitable foundation					
Commercial insurance					
Psychological counsellor					
physiotherapists					
Dietitians					

Table C4 Stakeholder Urgency Dimension Judgment

Hospice care service stakeholder	importance				
	very unimportant	less important	important	more important	very important
patients					
dependents					
Peer group					
Nursing staff					

Hospital administrators
Government function
Social service organizations
Universities/research institutes
Voluntary organizations
Caseworker
Community hospitals
Media, esp. news media
Foundation
Online Crowdfunding Platform
Charitable foundation
Commercial insurance
Psychological counsellor
physiotherapists
Dietitians

Part III

Service Content of Hospice Care Service in Governmental Hospital

Form-filling guides :

Following is preliminary indexes according to preliminary literature research. Each one is sort from low to high in order of importance: 1 = very unimportant, 2 = less important, 3 = important, 4 = more important, 5 = very important. You consider how important indexes are for carrying out hospice care service in governmental hospital and put a tick in in the appropriate box. If you find this index not described accurately, please modify it in the box writing "modification or deletion" or mark "delete"; if you think there are some aspects we not have considered, please add them to the box writing "proposed addition". The index you add or modify also should be considered its importance. Please don't miss any item.

Table C5 Entry I questionnaire

Entry I	Importance					Modification or deletion
	1	2	3	4	5	
Symptom management						

Psycho-spiritual support
Service management mechanism

Table C6 Entry II questionnaire

Entry I	Entry II	Importance					Modification or deletion
		1	2	3	4	5	
Symptom management	Symptom control						
	Comfortable nursing						
	Care support						
Psycho-spiritual support	Psychological support						
	Spiritual care						
	Narrative medicine						
Service management mechanism	Teamwork						
	Service assurance						
	Service effectiveness evaluation						

Table C7 Entry II questionnaire

Entry I	Entry II	Entry III	Importance	Modification or deletion
Symptom management	Symptom control	Pain control		
		Other symptom control		
		Symptom dynamic assessment mechanism		
	Comfortable nursing	Nursing guidance		
		Non-drug treatment		
		Specific nursing		
		Pharmaceutical administration		
	Care support	Nursing guidance		
		Medical consulting service		

Psycho-spiritual support	Psychological support	Psychological assessment
		Intervening measure
		Peer support
	Spiritual care	Spiritual needs assessment
		Death education
		Dignity maintenance
	Narrative medicine	Life review
		Vital file
		Emotional support
Service management mechanism	Teamwork	Communication and coordination mechanism
		Service skills assessment
		Rules and regulations
	Service assurance	Training and education
		Hardware facility
		Humanistic care
		Third-party support
	Service effectiveness evaluation	Professional evaluation
		Satisfaction evaluation
		Service file management

Part IV Situation of Experts

Form-filling guides :

Dear expert, Your support for this research will be deeply appreciated. For the convenience of the statistical analysis of the information, please fill in the following according to your own situation.

Name:______ Sex:____ Working Age:______Contact Number/Mailing Address:_______

Your work place: ( )

①colleges and universities/scientific institution ②Health administration department ③hospital ④social public service organization ⑤other option

Your highest degree: ( )

①doctor's degree □Master's degree □Bachelor degree □Associate degree □other option

Your professional title: ( )

①Senior title □Deputy senior title □Intermediate title □primary title □nothing

How long have you been engaged in hospice care service? ( )

①Within one year □1-3 years □4-7 years □7-10 years □More than ten years

How much do you know about the concept and service content of hospice care service? ( )

① very familiar ②familiar ③common ④not familiar ⑤quite ignorant

Which one is your main basis when you decide whether someone is stakeholder and his/her importance? ( )

① theoretical analysis ②practical experience ③learn from peers ④intuition

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Annex D: Life Profile Service Management Records for Patients with Advanced Cancer (Example)

Service Program	Service Content
Service recording time	Thursday, February 24, 2022
Service team	1 medical social worker, 2 nurses, 1 general practitioner, 3 medical school graduate volunteers, 1 supervisor, 1 specialist, 1 social service organization.
Basic information of patients	**Basic information**: The patient Aunt Jin, 81 years old, primary school culture, believes in Buddhism, has 2 daughters, the patient has a closer relationship with the younger daughter and the eldest granddaughter, and the relationship with the eldest daughter is average, and he is not good at words. 2021.12.27Colon cancer terminal extensive metastasis admission, referral from outside the hospital, wheelchair push, patients know the disease, but do not know the metastasis. The expected survival assessment (2021.12.27) scored 56 points, the estimated survival was 23 days, and the actual survival was 18 days. 9 points for intake assessment, 3 points for physical life, 5 points for breathing, 1.5 points for organ condition, and others. **Complaints of admission**: deep distress, hope to relieve pain and other discomfort. **Family need**s: Let the patient be pain-free in the final stage.
Symptom controller	1. Pain. Assessment and observation. The patient has persistent dull pain in the lower back, inability to stand during pain, nausea, anxiety, and has taken tylenine and pregabalin but poor analgesic effect. Treatment principles: (1) Discontinue taylorine and pregabalin(2) The third step analgesic morphine hydrochloride sustained-release tablets were titrated. 2. Cachexia.
Pharmaceutical administration	The patient has a history of hypertension for more than 10 years, and long-term use of CCB antihypertensive drugs is recommended to pay attention to the patient's lower limb edema (ankle joint). Morphine causes constipation and long-term constipation in patients, and it is recommended to add lactulose oral solution to assist stool. Methylprednisolone can improve vomiting, and patients with hypertension should not be used for long-term. Intravenous ciprofloxacin during drip rate control and light avoidance problems.
Comfort nursing	1. Ward environmental care: adjust room temperature 22-24°C and humidity 50-60%. Indoor air circulation keeps the environment quiet. 2. Bed unit management: (1) Evaluation and observation: patient's condition, consciousness, nutritional status(2) The bed unit is clean and tidy, and the bed sheets are replaced in time. 3. Symptom care: pain care assessment and observation: NRS score is 5 points. Adopt a comfortable position and provide targeted pain education. Give analgesics as directed.
Nutrition support	1. Observation and assessment. 2. SGA assessment: 5% weight loss in the last 2 weeks, grade C. Grade C for bed rest. Decrease in diet is grade B. Triceps skinfold thickness <8 is grade B.

	3. Re-observation and assessment after day 16. Diagnostic opinion: severe malnutrition. 4. Recommendations: Intensify nutritional support with a target daily energy supply of 1225-1500kcAL and 50G-75G of protein. Increase one egg per day, preferably in egg custard. Maintain 250ML of milk and 2 servings (200g) of fruit (puree, juice) per day. It is recommended to increase whey protein powder by 20G per day in porridge, milk and others, to increase nutrient density. It is recommended that ONS Energy 90G/day, 45G/time is added to 160ML of warm water and mixed with meals or fed in small amounts. Monitor blood protein, albumin, pre-albumin and other biochemical indicators related to nutrition. 5. Nutrition Department follow-up records. 2022.1.11 MNA-SF score of 2. SGA assessed 3 out of 8 indicators at level c and 5 out of 8 indicators at level B. Evaluation result: severe malnutrition. 2022.1.17 (day 22) Nutrition observation and assessment and nutrition prescription given. Survival for advanced bowel cancer > 1 month to improve quality of survival. Dietitian check-in 1 time per week. Encourage family to accompany meals. Encourage more eating based on the principle of minimizing food-related discomfort and maximizing food-related pleasure.
Psychological and spiritual support	1. Collect general and objective information of patients. (1) Patients cannot adapt to long-term bed rest and strongly require to get out of bed and move. (2) The patient said that he had devoted his life to family and work, rarely communicated with society, and now regretted that he did not have the opportunity to make friends, and regretted that he had few friends. (3) After the patient is admitted to the hospital, he misses his granddaughter, who is in high school, and the only one who is worried about it is his granddaughter. In the case of meeting the requirements of epidemic prevention and control, social workers communicate with family members to arrange for their granddaughter to visit the elderly, but they will visit in the future. The old man missed his granddaughter when he was dying, and strongly proposed to see his granddaughter many times. According to the family, in order not to affect the granddaughter's college entrance examination review, he insisted that the granddaughter not see the old man for the last time. In the end, the old man passed away with regret. 2. Help patients cope with emotional responses. (1) Encourage patients to fully express their feelings. (2) Communicate with the patient for more than half an hour every day, and listen to the client's memories of unforgettable experiences in life. (3) Every time the elderly see the medical staff of the team, they take the initiative to extend their hands and refuse to let go for a long time, and at the same time, they will strongly ask to talk more. (4) Daily medical social workers massage the elderly. The old man thanked the medical staff many times and said repeatedly: Among all the friends I know, it is a pity that I met late, but I was lucky to meet you at my hardest time, which is my luck. During the hospitalization, patients made many year-end friends and felt the warmth and satisfaction of the hospice care ward. 3. Respect the rights of families and death education. (1) Listen to the family's attitude and understanding of Buddhism, and understand the reasons why they urge their spouses to chant Buddhism every day. (2) Communicate with family members and inform them about the natural phenomena of aging and debilitation and the development of diseases. (3) Respect the patient/family belief in Buddhism, but tell that once the disease

	causes the inability to chant, the first attention should be paid to the patient's current body, and the family members should change from focusing on spiritual sustenance to paying attention to the patient's physical pain. 5. Grief counseling. The family and the patient have a deep relationship, and the grief is obvious. Keep phone follow-up with your family.
Social support	Before retirement, the patient was the backbone of the factory, and after retirement, he served as a building leader in the community, enthusiastically serving the community residents. Actively participate in environmental protection, patrol and other social volunteer services are busy. Patients lose social support upon admission. Loneliness and loss are evident. Patients are invited to connect with the ward, participate in Spring Festival activities, feel the festive atmosphere, and enhance their sense of belonging to the ward. Patients participate in the "I Tiger U" hospice care orientation themed activity. Medical staff present New Year's gifts to Grandma Kim. Grandma Kim accepted happily.
Hospitalization expenses	The total cost is 8943.10 yuan, with an average daily average of 509.90 yuan. Among them: drug fee accounted for 36.01%; treatment fee 19.81%; nursing fee 10.68%; oxygen cost 8.90; examination fee 4.89%; consultation fee 3.52%; examination fee (radiation, ultrasound) 2.12%; other expenses 2.29%.
Service summary and reflection	1. The elderly must take the initiative to hold the hands of the tranquility team members for a long time every time, and talk more, at this time, what are the psychological needs of the elderly? In addition to scales, what other ways and means to assess psychological needs? 2. How to use empathy and countertransference theory to analyze the relationship and role of patients and relatives. 3. Under the normalization of the epidemic, how to accompany and care for dying patients?
Serve the interests of stakeholders	Family's request: Get information on medical services and learn about options for pain relief. Demands of medical staff: At present, the workload of patient care is close to saturation, and more personnel are needed to ensure the quality of care. Medical volunteer appeal: Be able to count the number of volunteer hours and participate in hospice care symptom control to understand the patient's end-of-life interventions. Social worker appeal: Provide expert guidance on doctor-patient communication. Public welfare organizations: provide service publicity materials and give certain financial subsidies for service projects