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Integrated palliative care improves the quality of life of advanced cancer patients

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Abstract

Objective The objective of this research is to investigate the efficacy of integrated palliative care in enhancing advanced cancer patients' quality of life, alleviating pain, and improving psychological well-being through the development of a multidimensional hospice care model.

Methods This study involved 150 advanced cancer patients who received palliative care at our institution from January 2020 to December 2023. Participants were randomly assigned into two groups: the control group ($n = 75$) received standard care, while the treatment group ($n = 75$) received integrated palliative care, which included pain management strategies, psychological support, and family involvement. The quality of life of both groups was assessed pre- and post-intervention using the EORTC QLQ-C30 scale, which evaluates physical, emotional, and social functioning among other indicators. Mental health was assessed through the GAD-7 (Generalized Anxiety Disorder Scale) and PHQ-9 (Patient Health Questionnaire-9) to measure anxiety and depression levels. Furthermore, family members' satisfaction and support regarding the patient care process were evaluated using a tailored family satisfaction questionnaire.

Results There was no statistically significant difference in age, gender, and tumor type among the treatment group ($P > 0.05$). Prior to the intervention, there were no statistically significant differences between the two groups in EORTC QLQ-C30 scores, GAD-7 and PHQ-9 assessments, or family satisfaction ($P > 0.05$). Post-intervention, the treatment group exhibited significantly higher quality of life scores compared to the control group, alongside significantly lower anxiety and depression scores, and notably higher family satisfaction, all of which were statistically significant ($P < 0.05$).

Conclusion Integrated palliative care demonstrated substantial benefits in enhancing advanced cancer patients' quality of life, alleviating pain, and improving overall psychological health. The findings advocate for the integration of hospice care as a vital component of standard clinical practice and recommend its broader implementation across various departments to provide more compassionate care for patients and their families.

Keywords Integrated palliative care, Pain management, Psychological support, Quality of Life, Advanced cancer patients

Introduction

Globally, neoplasms have emerged as a leading cause of mortality, with both incidence and mortality rates of cancer on the rise. Patients diagnosed with tumors frequently endure physical, psychological, and various other forms of distress throughout their illness, impacting not only their well-being but also exerting profound effects on their families [1, 2]. Consequently, enhancing

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the quality of life for cancer patients and alleviating their suffering has become a critical concern. In recent years, oncology palliative care has increasingly been recognized as a vital component of cancer management worldwide. Numerous studies indicate that early intervention in palliative care not only effectively alleviates pain and other symptoms experienced by cancer patients but also enhances their overall quality of life [3–5]. Psychological needs encompass the provision of emotional and psychological support for patients, as anxiety and depression are prevalent issues among those with cancer. Palliative care should assist patients in managing emotional turmoil and bolstering their psychological resilience through emotional support, psychological counseling, and group therapy. The social dimension is primarily reflected in the interactions between patients and their families, friends, and healthcare teams. Robust social support can significantly enhance patients' quality of life [6–8]. Therefore, palliative care should promote ongoing connections between patients and their loved ones to foster a stable social network. The spiritual dimension pertains to the patient's quest for meaning in life, values, and beliefs. Many patients reflect on the significance of their lives and their spirituality as they confront the end of life [9]. The aim of this study was to examine the efficacy of integrated palliative care strategies in advanced cancer patients.

Materials and methods

General information

Utilizing a random grouping methodology, all patients were divided into an observation group and a control group at a 1:1 ratio. This study involved 150 advanced cancer patients who received hospice care at our hospital from January 2020 to December 2023. The participants were assigned to either the control group or the treatment group through the random number table method. No statistically significant differences were observed in the general information between the groups ($P > 0.05$). The control group ($n = 75$) received standard care, while the treatment group ($n = 75$) received integrated palliative care in addition to the control group's regimen, which included pain management, psychological support, humanistic care, family involvement, and other interventions.

Inclusion criteria: (1) Condition assessment: patients must have irreversible diseases, such as advanced cancer or chronic organ failure. (2) Examination indicators: the trend and comprehensive evaluation of the patient's recent laboratory and imaging results, indicating the degree of acute progression, metastasis, and short-term condition deterioration. (3) Expected survival: patients should have an anticipated survival time of less than 6

months or shorter survival expectations. (4) Medical ethics indicators: participation and informed consent must be independently provided by the family or the patient. (5) Estimated survival of at least a month.

Exclusion criteria: (1) Patients with non-terminal diseases: those with non-terminal tumors are excluded from hospice care. (2) Patients undergoing active treatment: individuals still receiving active treatment for their primary disease, such as radiotherapy or surgery, are excluded. (3) Patients with severe neurological or communication disorders: these patients may not fully comprehend the philosophy and services of hospice care or effectively communicate their wishes and needs. (4) Patients who are unwilling recipients of hospice care: if the patient or their family expresses resistance or uncertainty regarding hospice care, they may not be suitable candidates for this service. (5) Dying patients or patients unable to complete the study or care plan in a timely manner: individuals with severe violent tendencies, psychiatric disorders, or other conditions that could hinder the implementation of hospice services will be excluded. Experiments were approved by the Ethics Committee of Nanjing First Hospital and were conducted in compliance with the Helsinki Declaration. (6) Patient data will not be collected and analyzed if they cannot complete integrated palliative care due to death.

Methods

This research employed a mixed-methods approach, integrating both qualitative and quantitative methodologies. A specialized assessment team was established, comprising physicians, nurses, psychological counselors, social workers, and other relevant professionals, to evaluate physical, emotional, and social functioning, along with additional indicators utilizing the EORTC QLQ-C30 scale [10]. Mental health status was also evaluated, with anxiety and depression levels quantified through the GAD-7 (Generalized Anxiety Disorder Scale) and PHQ-9 (Patient Health Questionnaire-9) [11, 12]. Furthermore, a tailored family satisfaction survey was administered to gauge family members' contentment and support regarding the patient care process. Interviews and focus group discussions were conducted to gain insights into the experiences and emotions of both patients and their families, facilitating qualitative data analysis. The research adhered strictly to ethical guidelines, ensuring the confidentiality of participants. Experiments were approved by the Ethics Committee of Nanjing First Hospital and were conducted in compliance with the Helsinki Declaration. Informed consent was obtained from all participants before they participated in this study.

In the control group, standard nursing care protocols were implemented, which included routine health

education, addressing patients' negative emotions, nutritional and medication guidance, monitoring vital signs and condition changes, and providing timely, targeted interventions for any abnormalities.

The treatment group received integrated palliative care in addition to the standard care provided to the control group. This included pain management, psychological support, compassionate care, and family involvement, among other strategies: (1) Physical care involved managing pain based on its characteristics—nature, location, intensity, duration, and episodic patterns—selecting appropriate pharmacological and non-pharmacological interventions such as music therapy, massage, and relaxation techniques. Continuous pain assessment was conducted to monitor pain control, allowing for timely adjustments to the analgesic regimen to maintain pain levels within an acceptable range. Daily personal care was provided, guiding patients to find comfortable positions, ensuring airway patency, maintaining oral hygiene, attending to skin care, and offering dietary support aligned with patients' preferences, thereby balancing pain management with overall life care. (2) Psychological support focused on emotional and spiritual comfort, employing empathy, reassurance, and encouragement to communicate with patients and stabilize their emotional state. Techniques such as cognitive behavioral therapy, supportive psychotherapy, and music therapy were utilized to provide psychological guidance, assisting patients in adjusting their mindset and positively confronting their circumstances. When patients' physical conditions allowed, efforts were made to fulfill their reasonable wishes and desires, such as family reunions and completing unfinished tasks, thereby enhancing their sense of life meaning and alleviating feelings of regret and anxiety. (3) Humanistic care involves honoring the patient's rights to autonomy, privacy, and dignity, ensuring that all

nursing actions are grounded in a profound respect for the patient's preferences. This is achieved through compassionate and transparent communication, which not only conveys medical information but also prioritizes listening to the patients' emotions and needs, fostering a nurturing and empathetic environment. It is essential to equip family members with pertinent information regarding the illness, offer emotional support, and provide training in caregiving skills, enabling them to comprehend the patient's condition and actively participate in shared decision-making to deliver optimal care. Following the patient's passing, it is important to attend to the body respectfully and allow the family and the deceased the opportunity for a final farewell. Additionally, offering essential grief counseling and support is crucial to assist the family during this challenging period (Fig. 1).

Observation indicators

(1) Comparative analysis of patients' quality of life assessments across groups, where quality of life encompasses physical, emotional, and social functioning; a higher score indicates a better quality of life. (2) Evaluation of mental health status across groups, with higher GAD-7 and PHQ-9 scores reflecting increased severity of negative emotional states in patients. (3) Assessment of family satisfaction and support across groups, where higher scores in family satisfaction and support indicate more favorable assessment outcomes.

Statistical analysis

Data were statistically analyzed using SPSS 19.0, with categorical data presented as n (%), employing chi-square and rank-sum tests; continuous data, such as quality of life metrics, were expressed as (mean \pm standard deviation), utilizing t -tests. Statistical significance was determined at $P < 0.05$.

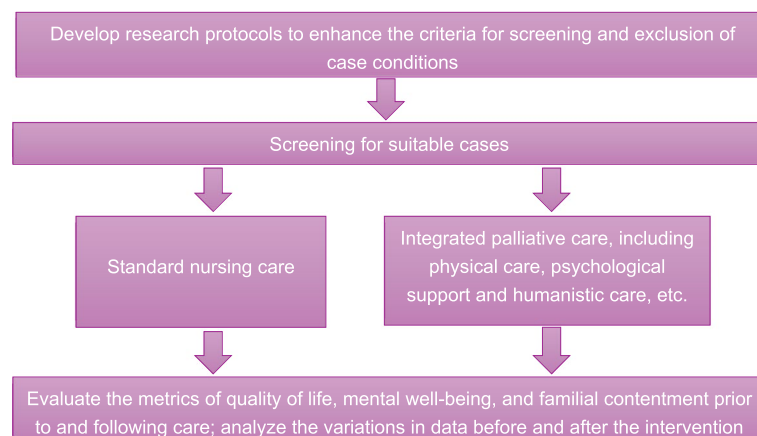


Fig. 1 Study design

Results

General information

There was no statistically significant difference in age, gender, and tumor type among the treatment group ($P > 0.05$) Table 1.

Quality of life evaluation

As shown in Table 2, at 7, 14, and 21 days of nursing care, the EORTC QLQ-C30 scores for both groups were significantly higher than their baseline scores prior to nursing care ($P < 0.05$). Additionally, the treatment group exhibited higher EORTC QLQ-C30 scores compared to the

control group ($P < 0.05$). At both 14 and 21 days of nursing care, the EORTC QLQ-C30 scores for both groups surpassed those recorded at 7 days ($P < 0.05$). Furthermore, at 21 days of nursing care, all EORTC QLQ-C30 scores for both groups were elevated compared to the scores at 14 days ($P < 0.05$).

Mental health status assessment

As shown in Table 3, at 7, 14, and 21 days of nursing, the GAD-7 and PHQ-9 scores for both groups were significantly lower than their pre-nursing scores ($P < 0.05$). The treatment group also demonstrated lower GAD-7 and PHQ-9 scores than the control group ($P < 0.05$). At both 14 and 21 days of nursing, the GAD-7 and PHQ-9 scores for both groups were lower than those at 7 days ($P < 0.05$). By 21 days of nursing, the scores for both groups were lower than those at 7 days ($P < 0.05$), and the GAD-7 and PHQ-9 scores were also lower than at 14 days ($P < 0.05$).

Family satisfaction and support evaluation

As shown in Table 4, at 7, 14, and 21 days of nursing, family satisfaction and support scores for both groups were significantly higher than their pre-nursing scores ($P < 0.05$), with the treatment group achieving higher scores than the control group ($P < 0.05$). At 14 and 21 days of nursing, family satisfaction and support scores for both groups exceeded those recorded at 7 days ($P < 0.05$). By 21 days of nursing, family satisfaction and support scores for both groups were higher than those at 14 days ($P < 0.05$).

Table 1 General information of 150 patients

	Treatment group (n = 75)	Control group (n = 75)	χ^2	P
Gender			0.273	0.601
male	49 (65.33)	52 (77.62)		
female	26 (34.67)	23 (30.67)		
Age			0.109	0.741
≥ 50	31 (41.33)	33 (44.00)		
< 50	44 (58.67)	42 (56.00)		
Tumor type			0.296	0.961
colorectal cancer	33 (44.00)	35 (46.67)		
liver cancer	12 (16.00)	13 (17.33)		
gastric cancer	13 (17.33)	11 (14.67)		
other	17 (22.67)	16 (21.33)		

Table 2 Evaluation of patients' quality of life prior to treatment, at 7 days, 14 days, and 21 days of treatment in two groups

Groups	Physical functioning	7 days of treatment	14 days of treatment	21 days of treatment
	Prior to treatment			
Control group (n = 75)	50.32 ± 10.73	60.75 ± 8.50*	70.15 ± 6.53*#	75.14 ± 5.32*#&
Treatment group (n = 75)	48.13 ± 9.57	65.01 ± 7.02*	75.23 ± 5.52*#	80.06 ± 3.41*#&
t	1.319	3.347	5.145	6.743
P	0.189	0.001	0.000	0.000
Groups	Emotional functioning	7 days of treatment	14 days of treatment	21 days of treatment
	Prior to treatment			
Control group (n = 75)	52.32 ± 9.39	62.45 ± 7.54*	72.15 ± 6.59*#	78.24 ± 4.27*#&
Treatment group (n = 75)	50.12 ± 8.52	68.02 ± 6.06*	78.23 ± 5.22*#	82.16 ± 3.08*#&
t	1.503	4.987	6.263	6.448
P	0.135	0.000	0.000	0.000
Groups	Social functioning	7 days of treatment	14 days of treatment	21 days of treatment
	Prior to treatment			
Control group (n = 75)	55.21 ± 10.23	60.08 ± 8.50*	66.89 ± 7.05*#	72.38 ± 6.04*#&
Treatment group (n = 75)	53.07 ± 9.52	67.45 ± 7.34*	75.40 ± 6.21*#	85.07 ± 4.22*#&
t	1.326	5.683	7.844	14.915
P	0.187	0.000	0.000	0.000

Comparison with prior to treatment, * indicates $P < 0.05$; comparison with 7 days of treatment, # indicates $P < 0.05$; comparison with 14 days of treatment, & indicates $P < 0.05$

Table 3 Evaluation of patients' mental health status prior to treatment, at 7 days, 14 days, and 21 days of treatment in two groups

Groups	GAD-7			
	Prior to treatment	7 days of treatment	14 days of treatment	21 days of treatment
Control group (n = 75)	12.00 ± 3.50	10.00 ± 2.80*	9.00 ± 2.50*#	8.00 ± 2.20*#&
Treatment group (n = 75)	11.50 ± 3.00	9.00 ± 2.50*	7.50 ± 2.00*#	6.00 ± 1.80*#&
t	0.939	2.307	4.058	6.093
P	0.349	0.022	0.000	0.000
Groups	PHQ-9			
	Prior to treatment	7 days of treatment	14 days of treatment	21 days of treatment
Control group (n = 75)	15.00 ± 4.00	13.00 ± 2.50*	11.00 ± 2.23*#	10.00 ± 2.80*#&
Treatment group (n = 75)	14.50 ± 4.50	12.00 ± 2.80*	9.50 ± 2.20*#	8.00 ± 2.00*#&
t	0.719	2.307	4.147	5.034
P	0.473	0.022	0.000	0.000

Comparison with prior to treatment, * indicates $P < 0.05$; comparison with 7 days of treatment, # indicates $P < 0.05$; comparison with 7 days of treatment, & indicates $P < 0.05$

Table 4 Evaluation of family satisfaction and support for patients prior to treatment, at 7 days, 14 days, and 21 days of treatment in two groups

Groups	Prior to treatment	7 days of treatment	14 days of treatment	21 days of treatment
Control group (n = 75)	60.25 ± 8.67	65.10 ± 8.45*	55.30 ± 9.12*#	57.20 ± 8.90*#&
Treatment group (n = 75)	61.40 ± 9.05	80.15 ± 7.95*	76.50 ± 8.34*#	75.10 ± 6.80*#&
t	0.795	11.234	14.856	13.840
P	0.428	0.000	0.000	0.000

Comparison with prior to treatment, * indicates $P < 0.05$; comparison with 7 days of treatment, # indicates $P < 0.05$; comparison with 7 days of treatment, & indicates $P < 0.05$

Discussion

Tumors are frequently encountered in clinical settings, often associated with respiratory issues, diminished appetite, and cancer-related pain. Notably, the prevalence of cancer pain can exceed 70% in the advanced stages of tumors, leading to a deterioration in bodily functions and abnormal laboratory results. The ongoing experience of cancer pain can significantly heighten the psychological and emotional burden on elderly patients, resulting in adverse emotional states that compromise treatment efficacy and overall quality of life [13–15]. Assessing the severity of cancer pain, providing timely pain management, and enhancing the quality of life are crucial strategies for effectively mitigating pain levels in patients. As modern expectations for clinical treatment and nursing care evolve, traditional analgesic methods, along with efforts to alleviate negative emotions and psychological stress, are increasingly inadequate to fulfill clinical demands [16–19]. Consequently, it is imperative to enhance interventions aimed at reducing patient pain and alleviating psychological stress and negative emotions.

The integrated palliative care model represents a holistic approach to care for patients experiencing end-stage diseases and chronic organ failure as they approach the

end of life. This model encompasses various aspects of care, including physical, psychological, spiritual, and social support. Physical care focuses on symptom management, such as alleviating pain and dyspnea through medication and physical therapy [20], while also providing tailored dietary recommendations based on individual nutritional needs or implementing appropriate intravenous nutritional support to enhance patient comfort. For how to carry out enteral nutrition support, patients need to be comprehensively evaluated. Possible risks such as catheter-related complications, hyperglycemia, volume overload, and deterioration of liver function should be fully considered when implementing parenteral nutrition support [21, 22]. An in-depth discussion with the patient and family is needed, and if the potential benefits outweigh the risks, parenteral nutrition should be used. Chen et al. analyzed the use of palliative interventions (surgery, chemotherapy, radiotherapy, pain management) in 142,304 patients with stage III-IV gastrointestinal cancer. They found substantial variation in the use of palliative interventions across hospitals, which may be related to sociodemographic and hospital characteristics [23]. Psychological care is a critical component of the integrated palliative care model, aimed at

mitigating negative emotions such as anxiety and fear through psychological counseling, while fostering a sense of care and warmth through emotional support. Literature suggests that family hospice care or clinical care within oncology departments can enhance patients' feelings of support and reduce emotional distress [24]. Spiritual care involves guiding patients to reflect on significant life experiences and offering flexible care measures that honor their personal beliefs [25]. Social support is equally vital, promoting the involvement and assistance of family members and leveraging community resources to provide additional help to patients.

In this study, assessments conducted at 7, 14, and 21 days of care revealed that the treatment group exhibited higher quality of life scores and lower GAD-7 and PHQ-9 scores compared to the control group, while family members reported higher satisfaction and support scores than those in the control group. The objective of integrated palliative care is to deliver comprehensive and nuanced care services that enhance patients' quality of life and comfort. Our study validates that implementing integrated palliative care strategies for advanced cancer patients addresses their physical, psychological, and spiritual needs, while also providing robust social support. This approach not only improves patient comfort and fosters a positive mental state but also strengthens the bond between patients and their families, offering emotional support and companionship, thereby instilling a sense of care and warmth. The findings confirm that integrated palliative care measures can significantly enhance the quality of life for cancer patients, encouraging them to maintain a positive and optimistic outlook towards their illness, treatment, and life, ultimately alleviating their pain and enhancing their comfort.

In summary, the implementation of a comprehensive array of integrated palliative care interventions in the treatment and care of oncology patients can markedly enhance their quality of life, alleviate negative emotional states, and bolster family satisfaction and support. It is important to acknowledge that while this study has validated the critical role of integrating palliative care in enhancing patients' quality of life, further investigation is warranted. It is advisable to establish a scientifically sound assessment framework covering different palliative care environments such as hospitals, communities and families and to conduct extensive multicenter randomized controlled trials to gather more representative clinical data. Additionally, personalized care plans should be developed, taking into account the unique characteristics of each patient to ensure optimal support. Concurrently, there should be an emphasis on the training of healthcare professionals to improve their expertise, and interdisciplinary collaboration should be promoted to

integrate insights from psychology, sociology, and nursing, thereby offering patients more holistic care solutions. These initiatives will facilitate the standardization and customization of integrated palliative care.

It is suggested to establish a scientific and reasonable evaluation system, covering different environments such as hospitals, communities and families, and carry out multi-center large-scale randomized controlled trials to obtain more representative clinical data.

Acknowledgements

Not applicable.

Authors' contributions

M.W. and X.D. wrote the main manuscript text and prepared Fig. 1 and tables 1–4. All authors reviewed the manuscript.

Funding

Not applicable.

Data availability

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

Declarations

Ethics approval and consent to participate

Experiments were approved by the Ethics Committee of Nanjing First Hospital and were conducted in compliance with the Helsinki Declaration. Informed consent was obtained from all participants before they participated in this study.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Received: 27 January 2025 Accepted: 2 June 2025

Published online: 07 June 2025

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