Journal of Biosciences and Medicines, 2025, 13(10), 122-131
https://www.scirp.org/journal/jbm
ISSN Online: 2327-509X
ISSN Print: 2327-5081

Application of Cognitive Behavioral Therapy in Hospice Care of Cancer Patients

Lingling Tang, Qiong Wen*

Department of Oncology, First People's Hospital of Jingzhou City, Jingzhou, China
Email: *790373472@qq.com

How to cite this paper: Tang, L.L. and Wen, Q. (2025) Application of Cognitive Behavioral Therapy in Hospice Care of Cancer Patients. *Journal of Biosciences and Medicines*, **13**, 122-131.
https://doi.org/10.4236/jbm.2025.1310011

Received: September 2, 2025
Accepted: October 13, 2025
Published: October 16, 2025

Abstract

Objective: To explore the application value of Cognitive Behavioral Therapy (CBT) in palliative care for terminally ill cancer patients, providing practical evidence to alleviate psychological distress, improve quality of life, and promote clinical implementation of palliative care. **Methods:** A total of 60 terminally ill cancer patients from the oncology department of a tertiary hospital were randomly assigned into a control group (30 cases) and an intervention group (30 cases) using a randomized digital table method. The control group received standard oncology care, while the intervention group underwent structured CBT therapy based on routine care. The intervention lasted 4 weeks, with two 45-minute sessions per week. Intervention components included: semi-structured interviews to guide patients in expressing concerns about their condition and mortality; Socratic questioning to correct negative cognitions; behavioral activation activities (light walking, craft-making); daily 10-minute mindful breathing meditation; progressive muscle relaxation training; and "Life Line Drawing" meaning therapy. Effectiveness was evaluated using the Hospital Anxiety and Depression Scale (HADS), European Organization for Cancer Research and Treatment Life Quality Core Scale (EORTC QLQ-C30), Numerical Rating System of Pain (NRS), and insomnia incidence rates before and 4 weeks after intervention. **Results:** After intervention, the HADS anxiety score in the intervention group decreased significantly from (10.2 ± 1.5) to (6.8 ± 1.2), showing a statistically significant difference compared to the control group ($p < 0.01$). The EORTC QLQ-C30 total score increased from (52.3 ± 6.1) to (68.7 ± 5.4), with statistically significant improvements in emotional function, social functioning, and overall health status ($p < 0.05$). The NRS pain score dropped from (5.2 ± 0.8) to (3.1 ± 0.6), while the insomnia incidence rate decreased from 65% to 30%. Both outcomes demonstrated superior improvement compared to the control group ($p < 0.01$). **Conclusion:** Cognitive Behavioral Therapy (CBT)

---

*Corresponding author.

effectively alleviates anxiety symptoms, enhances quality of life, and improves physical symptoms like pain and sleep by correcting distorted perceptions, activating adaptive behaviors, and regulating negative emotions in terminally ill cancer patients. Integrating CBT into palliative care systems facilitates holistic "physical, mental, social, and spiritual" care, thereby enhancing patients' dignity during their final stages.

Keywords

Cognitive Behavioral Therapy, Cancer, Hospice Care, Palliative Care, Anxiety, Quality of Life

1. Introduction

With the intensifying global aging population and rising incidence of malignant tumors, the growing number of terminal cancer patients has made quality of life and the need for end-of-life care a major societal concern. Palliative care, as a comprehensive approach for terminally ill patients, focuses on multidisciplinary collaboration to provide holistic support across physical, psychological, social, and spiritual dimensions. This integrated model aims to alleviate suffering, enhance comfort, preserve dignity, and offer emotional support to patients during their final stages [1]. However, China's palliative care development still faces multiple challenges in clinical practice, with significant gaps including cognitive misunderstandings and low acceptance rates among terminal cancer patients regarding this intervention.

Patients with terminal cancer are prone to developing negative emotions and distorted perceptions due to physical suffering, fear of death, uncertainty about treatment outcomes, and social role transitions. Research indicates that over 60% of these patients experience psychological issues such as anxiety and depression. Some refuse hospice care services, misinterpreting them as "abandoning treatment" or "accelerating death," which results in unnecessary suffering during their final days and hinders access to high-quality end-of-life care [2]. Moreover, patients' misconceptions compromise informed decision-making regarding treatment, waste medical resources, and impose heavy psychological burdens on families. Therefore, implementing scientifically sound interventions to improve patients' understanding of hospice care and alleviate their psychological distress remains a critical priority in this field.

Traditional psychological support primarily relies on listening, empathy, and general reassurance, lacking structured and systematic intervention methods. Cognitive Behavioral Therapy (CBT), validated through extensive clinical practice, posits that emotional and behavioral responses are not directly determined by events themselves, but rather by cognitive evaluations of those events. By modifying erroneous cognitive patterns and adjusting unhealthy behavioral habits, individuals can effectively improve their emotional well-being and quality of life [3].

In psychological interventions for cancer patients, this therapy has been widely adopted to alleviate anxiety and depression, enhance treatment adherence, and boost quality of life, with significant therapeutic effects demonstrated [4] [5].

However, current research on cognitive behavioral therapy (CBT) in improving palliative care cognition among end-stage cancer patients remains limited. Existing studies predominantly focus on alleviating psychological symptoms, with insufficient exploration of the mechanisms underlying cognitive changes and long-term effects in palliative care. To address this gap, this study systematically analyzes specific application methods and outcomes of CBT in enhancing palliative care cognition, providing practical evidence for its clinical implementation in palliative care practice.

Based on this, this study further explored the application effect of the adaptive adjustment of the CBT program in improving the anxiety of hospice cancer patients, improving their quality of life, and alleviating related symptoms, aiming to provide a feasible psychosocial intervention model for clinical practice and to enrich and improve the overall hospice care service system.

2. Subjects and Methods

2.1. Research Subjects

A study was conducted between March and September 2024, involving 60 terminally ill cancer patients in the oncology department of a tertiary hospital in Jingzhou City. Each patient was assigned a unique number (1 - 60). Using the randomized digital table method, the eligible patients were evenly divided into an intervention group (30 cases) and a control group (30 cases) at a 1:1 ratio. The two groups showed no statistically significant differences in age, gender, tumor type, educational background, anxiety scores, or baseline quality of life ($p > 0.05$), confirming their comparability. See **Table 1**.

Table 1. Comparison of general data between the two groups [n (%)/(x ± s)].

Feature	Intervention Group (n = 30)	Control Group (n = 30)	χ^2/t value	*p*-value
Sex			0.067	0.796
Man	16 (53.3%)	17 (56.7%)		
Woman	14 (46.7%)	13 (43.3%)		
Age (years)	62.5 ± 7.8	61.2 ± 8.1	0.642	0.524
Degree of education			0.449	0.799
Junior high school and below	12 (40.0%)	14 (46.7%)		
High school/vocational school	11 (36.7%)	9 (30.0%)		
College and above	7 (23.3%)	7 (23.3%)		
Type of tumor			1.203	0.752
Carcinoma of the lungs	11 (36.7%)	9 (30.0%)		

Continued

Gastrointestinal cancers	10 (33.3%)	12 (40.0%)		
Mammary cancer	4 (13.3%)	5 (16.7%)		
Other	5 (16.7%)	4 (13.3%)		
Life expectancy (months)	4.2 ± 1.1	4.0 ± 1.3	0.645	0.522
HADS-A baseline score (score)	10.2 ± 1.5	10.0 ± 1.6	0.509	0.613
NRS pain baseline score (score)	5.2 ± 0.8	5.1 ± 0.9	0.455	0.651
QLQ-C30 baseline total score (points)	52.3 ± 6.1	51.8 ± 6.5	0.314	0.755

2.2. NAP Standards

Inclusion criteria: 1) Pathologically or radiologically confirmed malignant tumors with a final diagnosis by oncologists, and an expected survival period ≤ 6 months; 2) Age 45 - 75 years; 3) Clear consciousness and basic communication ability, with Mini-Mental State Examination (MMSE) score > 24; 4) Hospital Anxiety and Depression Scale-Anxiety Subscale (HADS-A) score ≥ 8 indicating moderate-to-severe anxiety; 5) Informed consent and voluntary participation in the study.

Exclusion criteria: 1) Presence of severe cognitive impairment or established psychiatric history; 2) Severe hearing or speech impairments that prevent effective communication; 3) Critically ill patients with a Karnofsky Performance Status (KPS) score < 30 who cannot tolerate interventions; 4) Patients undergoing other systematic psychotherapy; 5) Patients or their families refusing to participate in the study, or unable to complete the entire research process for other reasons.

2.3. Methodology

Control Group: Implementation of Palliative Care, including 1) Pain Management: Accurate pain assessment following WHO's three-step analgesia principle, with timely and individualized use of pharmacological and non-pharmacological methods; 2) Common Symptom Control: Effective management of symptoms such as dyspnea, nausea/vomiting, constipation, anorexia, fatigue, agitation, and excessive secretions; 3) Basic Living Care: Providing comprehensive oral care, skin hygiene, body cleansing, repositioning, and toileting assistance to maintain patient dignity and comfort; 4) Dietary Provision Based on Patient Preferences and Swallowing Capacity: Emphasizing "comfortable eating" over rigid "nutritional support." In advanced stages, oral moistening care may be sufficient.

Intervention group: The CBT intervention was implemented on the basis of routine hospice care, twice a week, each time for 45 - 60 minutes, for 4 weeks, for a total of 8 times. During the intervention period, changes in the use of analgesic or sedative drugs were monitored.

The intervention plan is designed adaptively on the classic CBT framework and combined with the characteristics of terminal patients. The main content is as follows:

Phase 1 (1 - 2 times): Relationship Building and Psychoeducation

Nursing specialists in palliative care begin by building trust with patients, then create a safe and supportive environment through structured interviews to help them openly discuss their deepest concerns about disease progression, treatment side effects, end-of-life experiences, family futures, and unfulfilled wishes. They subsequently explain the "Cognitive-Emotional-Behavioral" (CEB) triangle model using plain language, helping patients understand how negative thoughts affect both emotional well-being and physical health. This approach also emphasizes that "what we think isn't always what we see," encouraging patients to practice examining and modifying these thought patterns through daily interactions.

Phase 2 (3 - 5 times): Cognitive Restructuring

Nursing specialists employ Socratic questioning to guide patients in examining and challenging their automatic negative thoughts. For example, when a patient states, "I'm a burden to my family," the nurse might ask: "What evidence supports this view? What evidence contradicts it?" "Has your family ever specifically mentioned what they need from you? How did they express these needs?" "If your family member were ill, would you consider them a burden?"

Through this structured questioning process, we help patients develop a more comprehensive and objective perspective, gradually building a rational understanding that adapts to their current situation. We then guide them to reframe negative thoughts into positive or neutral expressions, such as transforming "I can't do anything anymore" into "While my physical strength may be diminished, I can still communicate through words and laughter, offering love and support to my family."

Phase 3 (6 - 8 times): Behavioral Activation and Relaxation Training

Certified nursing specialists in palliative care work with patients to create a "Pleasure and Achievement Activity List" based on their current physical condition and interests. The list includes, but is not limited to: 5 - 10 minutes of daily walks, listening to favorite old songs, viewing family photo albums, engaging in simple crafts (like knitting or puzzle-making), having brief conversations with family members, and enjoying small portions of preferred foods. Patients are required to complete 2 - 3 activities daily and document their emotional responses after each session.

Mindfulness meditation and breathing exercises: Guide patients through 10 minutes of daily mindfulness breathing practice. Lead them to focus on the rise and fall of their breath, gently redirecting their attention back to the breath while practicing nonjudgmental acceptance of the present experience.

Progressive muscle relaxation training (PMR): Guide patients to "tense-hold-relax" the muscle groups, such as hands, face, shoulders, neck, and abdomen in turn, and experience the difference between tension and relaxation.

Meaningful Therapy and Life Reflection: Through the "Life Line Drawing" technique, patients are guided to sketch or write down significant milestones, achievements, meaningful relationships, and high points in their lives on a long sheet of paper. This method helps individuals systematically revisit their life journey, affirm their value, accomplishments, and cherished connections, achieve self-integration, and reduce feelings of regret over perceived wasted time. During reflection, unresolved matters naturally surface, fostering family discussions about the "Four Dimensions of Life" (expressing gratitude, apologizing, showing love, and saying goodbye). The process provides an outlet for patients to articulate complex emotions such as resentment toward illness, fears about the future, or reluctance to part with loved ones. Ultimately, this life line drawing becomes a precious "legacy" that serves as both a memorial and a window for family understanding.

2.4. Evaluation Indicators

The following indicators were evaluated before the intervention (T0) and after 4 weeks of intervention (T1):

1) Anxiety: The anxiety subscale of the Hospital Anxiety and Depression Scale (HADS-A) was used for evaluation to exclude the interference of physical symptoms, and a score of ≥8 indicated the presence of an anxiety state.

2) Quality of life: The Chinese version of the European Organization for Research and Treatment of Cancer Core Scale of Life Quality (EORTC QLQ-C30) V3.0 was used for evaluation.

3) Pain and insomnia: The average pain intensity over the past 24 hours was assessed using the numeric pain scale (NRS) (0 - 10 points). The incidence of insomnia in both groups was recorded (via sleep disorder items in the EORTC QLQ-C30 or direct inquiry).

2.5. Statistical Methods

Statistical analysis was performed using SPSS 25.0 software. Quantitative data were presented as mean ± standard deviation ($x \pm s$), with paired t-tests for intra-group comparisons and independent samples t-tests for inter-group comparisons. Categorical data were expressed as percentages (%), with χ^2 tests applied. A *p*-value < 0.05 was considered statistically significant.

3. Results

3.1. Comparison of Anxiety Scores (HADS-A) between the Two Groups

After 4 weeks of intervention, the HADS-A score in the intervention group decreased significantly from (10.2 ± 1.5) to (6.8 ± 1.2), with extremely significant statistical significance ($p < 0.01$). See Table 2.

3.2. Comparison of Quality of Life (EORTC QLQ-C30) between the Two Groups

The intervention group demonstrated significantly better outcomes than the control group in emotional functioning, social functioning, overall health status, and total scores. Notably, there were marked improvements in symptom subscale measurements regarding fatigue, pain, and insomnia. Comprehensive enhancements were observed across emotional functioning, social functioning, overall health status domains, and total scale scores ($p < 0.05$), with the most notable progress achieved in emotional functioning. See Table 3.

Table 2. Comparison of HADS-A scores before and after intervention in two groups (x ± s, points).

Group	Number of cases	Before the intervention	After intervention	t value	*p*-value
Intervention Group	30	10.2 ± 1.5	6.8 ± 1.2	9.87	<0.01
Control Group	30	10.0 ± 1.6	9.5 ± 1.7	1.34	>0.05
t value		0.51	7.02		
p-value		>0.05	<0.01		

Table 3. Comparison of EORTC QLQ-C30 scores in some fields after intervention in two groups (x ± s, points).

Domain	Group	Before the intervention	After intervention	t/*p* within the group	Intervention group t/*p* (after intervention)
Emotional function	Intervention Group	45.6 ± 10.2	72.3 ± 8.7	<0.01	<0.01
	Control Group	46.8 ± 9.7	48.2 ± 10.5	>0.05	
Social function	Intervention Group	40.1 ± 11.5	65.8 ± 9.6	<0.01	<0.05
	Control Group	41.3 ± 10.8	42.0 ± 11.2	>0.05	
Overall health	Intervention Group	35.2 ± 8.4	60.5 ± 7.9	<0.01	<0.01
	Control Group	36.0 ± 9.1	37.5 ± 8.7	>0.05	
Total scale score	Intervention Group	52.3 ± 6.1	68.7 ± 5.4	<0.01	<0.01
	Control Group	51.8 ± 6.5	53.1 ± 6.8	>0.05	

3.3. Comparison of Pain and Insomnia between the Two Groups

After the intervention, the NRS score of pain in patients in the intervention group decreased significantly, and the dosage of pain medication remained stable, as shown in Table 4. The incidence of insomnia in the intervention group was lower than that in the control group, and the dosage of sedative drugs was reduced, as shown in Table 5.

Table 4. Comparison of pain NRS scores before and after intervention in the two groups (x ± s, points).

Group	Number of cases	Before the intervention	After intervention	*p*-value	Post-intervention *p*-values
Intervention Group	30	5.2 ± 0.8	3.1 ± 0.6	<0.01	<0.01
Control Group	30	5.1 ± 0.9	4.9 ± 0.7	>0.05	

Table 5. Comparison of insomnia incidence between the two groups before and after intervention [n (%)].

Group	Number of cases	Before the intervention	After intervention	*p*-value	Post-intervention *p*-values
Intervention Group	30	19 (65.0%)	9 (30.0%)	<0.05	<0.05
Control Group	30	18 (60.0%)	17 (56.7%)	>0.05	

4. Discussion

The results of this study showed that 4-week CBT could significantly improve patients' anxiety, quality of life, and some physical symptoms.

4.1. CBT Improves Patients' Anxiety

In this study, the HADS-A score in the intervention group showed a significant decrease. The anxiety of terminal patients often stems from fear of the unknown, the pain of separation from family and friends, and a collapse of "self-concept"—such as transforming from caregivers to a "burden" [6].

When employing Socratic questioning, therapists avoid direct rebuttals or lectures. Instead, they guide patients to recognize cognitive distortions in their thinking—such as "black-and-white thinking," "overgeneralization," and "catastrophizing"—helping them gradually adopt more realistic and self-compassionate perspectives. For instance, some patients who previously viewed "dependence on others" as a flaw began to see it as "accepting love" or "giving family members space to express care." This mental shift significantly reduces feelings of shame and burden. Such profound and lasting cognitive transformation is an effect that cannot be achieved through medication alone.

4.2. Multidimensional Improvement of Quality of Life by CBT

The EORTC QLQ-C30 scale assessment demonstrated significant improvements in emotional functioning, social functioning, and overall health status among patients in the intervention group. Enhanced emotional well-being boosted participants' willingness and energy to communicate with family members, enabling them to actively engage in household chores, conduct life reviews, and even prepare for end-of-life farewells—thereby improving the quality of social connections. Notably, "behavioral activation" served as a key intervention strategy. By encouraging patients to participate in manageable daily activities, this approach effectively disrupted the "bedridden → functional decline → emotional deterioration" vicious cycle, helping them rebuild a sense of control over their lives and self-efficacy.

4.3. Indirect Relief of Physical Symptoms by CBT

The intervention group also demonstrated significant improvements in pain and sleep quality. These enhancements were primarily achieved through the "psycho-physiological" interaction mechanism rather than direct physiological interventions by CBT. Previous studies have shown that emotional issues like anxiety and depression can significantly lower pain thresholds while increasing pain sensitivity. Emotional stress also triggers muscle tension and autonomic nervous system dysfunction, further exacerbating pain perception and sleep disorders, forming a vicious cycle of "pain-anxiety-insomnia" [7] [8]. CBT disrupts this cycle through multiple approaches: On one hand, cognitive restructuring helps alleviate anticipatory anxiety. When patients stop viewing pain as a "sign of losing control" and instead rationally perceive it as a manageable symptom, their fear of pain and catastrophic thinking diminishes, leading to reduced subjective pain perception. On the other hand, Progressive Muscle Relaxation (PMR) and mindfulness breathing exercises directly address physiological aspects, helping relieve muscle tension and regulate autonomic nervous system activity, thereby improving physical discomfort and sleep quality.

4.4. The Unique Value of Life Review in Hospice Care

This study innovatively integrates "Life Line Drawing" technology into the classic CBT framework, serving as a vehicle for meaning therapy and adding a crucial dimension to palliative care interventions. Through systematic life retrospection, patients can break free from the identity of "a cancer patient waiting to die," and rediscover their rich identities as workers, parents, friends, and creators with profound life value. This affirmation and acceptance of life represent a higher-level cognitive restructuring that brings deep inner peace and reconciliation, significantly enhancing dignity in the final stages of life.

5. Conclusions

In conclusion, this study demonstrates through clinical controlled trials that cognitive behavioral therapy, adaptively designed for end-stage cancer patients' physiological and psychological characteristics, serves as an effective, feasible, and humanized psychosocial intervention. Rather than relying on isolated techniques, this therapy systematically integrates "cognitive restructuring, behavioral activation, relaxation training, and life review" to address patients' misconceptions about illness, mortality, and palliative care at their cognitive roots. It activates adaptive behaviors (such as proactive social engagement and symptom self-management), regulates negative emotions like anxiety and depression, and ultimately achieves multidimensional outcomes: "emotional relief, improved quality of life, and physical symptom improvement."

Integrating Computer-Based Therapy (CBT) into routine palliative care systems effectively addresses the traditional imbalance of "prioritizing physical care over psychological intervention." This approach elevates palliative care from mere "physical comfort maintenance" to a holistic "body-mind-spirit-social well-being" framework. It empowers terminally ill cancer patients to complete their final journey with greater composure, dignity, and a sense of control, ultimately realizing the ideal goal of "quality end-of-life care" (OELC).

However, this study has certain limitations that require improvement in future research. The sample size was limited to a single tertiary hospital, and factors such as geographical constraints, medical resources, and patient baseline characteristics may affect the generalizability of the findings. Future studies should expand the sample size and include patients from hospitals of different levels and community health centers to further validate the applicability of CBT. Additionally, the intervention period was set at 4 weeks without long-term follow-up after treatment, making it impossible to assess the persistence of CBT's effects. Subsequent studies could extend the follow-up period to observe sustained outcomes. Future research could design multi-factor intervention plans and enhance training for nursing staff in CBT implementation. Furthermore, optimizing comprehensive management strategies for end-stage cancer patients will provide richer practical references for advancing high-quality hospice care development.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] Beck, A.T. (1976) Cognitive Therapy and the Emotional Disorders. International Universities Press.

[2] Holland, J.C., Breitbart, W.S., Jacobsen, P.B., Loscalzo, M.J., McCorkle, R. and Butow, P.N. (2019) The Oxford Textbook of Psychooncology. 3rd Edition, Oxford University Press.

[3] Li, R.X., Ma, Z.X., Liu, S.M., *et al*. (2023) Analysis of the Application Value of Palliative Care Teams in Clinical Nursing of Patients with End-Stage Malignant Tumors. *Clinical Research*, **31**, 181-184.

[4] World Health Organization (2020) Palliative Care.

[5] Qu, Y., Wang, A.J., Shen, L., Shi, X.T. and Cao, Y.J. (2020) A Qualitative Study on the Needs of Palliative Care for End-Stage Cancer Patients. *China Journal of Practical Nursing*, **36**, 2284-2288.

[6] Liao, Z.J., Huang, Y., Liu, H.D., Li, S.Q. and Yang, Z.Y. (2021) The Rehabilitative Effect of Psychological Intervention in Patients with Terminal Cancer. *Chinese Journal of Physicians*, **23**, 598-600.

[7] Li, J.P. and Xiao, H. (2024) Meta Analysis of Cognitive Behavioral Therapy's Intervention Effects on Anxiety, Depression, and Quality of Life in Lung Cancer Patients. *International Journal of Medical Health Herald*, **30**, 890-896.

[8] Breitbart, W., Rosenfeld, B., Gibson, C., Pessin, H., Poppito, S. and Nelson, C. (2010) Meaning-Centered Psychotherapy for Patients with Advanced Cancer: A Pilot Study. *Palliative Support Care*, **8**, 299-314.