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Impact of Spiritual Care Nursing Based on the "Four-full Framework" on Liver Cancer Patients

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Abstract: *Objective*: To explore the impact of spiritual care nursing based on the "Four-full Framework" (whole-person, whole-process, whole-department, whole-society) on the spiritual status, psychological distress, and quality of life of liver cancer patients. *Methods*: A total of 120 terminally ill liver cancer patients admitted to the hospital from January 2022 to December 2023 were divided into a control group (60 cases, receiving routine nursing) and an observation group (60 cases, receiving routine nursing plus spiritual care nursing based on the four-full framework) according to their admission order. Both groups were intervened for 4 consecutive weeks. The two groups were compared in terms of death attitude, spiritual status, psychological distress, and quality of life. *Results*: After intervention, the observation group had lower scores in death avoidance, death fear, escape acceptance, and psychological distress, while higher scores in natural acceptance, approach acceptance, all dimensions of spiritual status, psychological resilience, and all aspects of quality of life compared with the control group, with statistically significant differences ($P < 0.05$). *Conclusion*: Spiritual care nursing based on the four-full framework can effectively help terminally ill liver cancer patients face death positively, improve their spiritual status, reduce psychological distress, and enhance their quality of life.

Keywords: Four-full framework; Spiritual care nursing; Liver cancer; Spiritual status; Psychological distress; Quality of life

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1. Introduction

Liver cancer is a malignant tumor originating in liver tissue, primarily caused by hepatitis B and C viruses. Most patients are diagnosed at advanced stages, severely affecting their prognosis [1, 2]. Reports show that its incidence has risen to the 4th highest among all malignant tumors in China, with a mortality rate ranking 2nd, posing a serious threat to patients' lives [3]. Clinical treatments for liver cancer mainly include hepatectomy, interventional therapy, chemotherapy, and immunotherapy [4]. However, terminally ill patients often suffer from complex symptoms due to physical debilitation and multiple cancer metastases, with incurable conditions. Influenced by

factors such as cancer pain, drug side effects, guilt toward family, and the awareness of impending death, they are prone to negative emotions, significantly reducing their quality of life [5]. Therefore, targeted spiritual care is necessary for such patients. Nursing intervention based on the "four-full framework" refers to a holistic care model integrating physical, psychological, social, and spiritual dimensions, which has been partially applied in clinical nursing for cancer patients and can effectively improve their quality of life [6, 7]. Spiritual care nursing is a model that implements relevant interventions based on spiritual health theories to enhance patients' mental health, helping them find meaning in life and improve their hope [8]. To explore more effective intervention models for clinical nursing of liver cancer patients, this study investigated the impact of spiritual care nursing based on the four-full framework on their spiritual status, psychological distress, and quality of life.

2. Materials and methods

2.1. General data

The study period is conducted from January 2022 to December 2023. A total of 120 liver cancer patients admitted to the hospital are divided into a control group and an observation group (60 cases each) according to their admission order. There were no statistically significant differences in general data between the two groups ($P > 0.05$), indicating comparability (**Table 1**). This study is approved by the hospital's ethics committee.

Table 1. Comparison of general data between groups

Group	Gender (Male/ Female, n)	Age (x±s, years)	Lesion diameter (x±s, cm)	Marital status (n)		Educational level (n)		
				Married	Unmarried/ Divorced	Junior high school and below	Secondary technical/ High school	College and above
Observation (n=60)	37/23	55.25 ± 6.58	6.83 ± 1.21	49	11	19	17	24
Control (n=60)	32/28	54.35 ± 6.42	7.05 ± 1.37	52	8	21	19	20
χ^2/t	0.853	0.758	0.932	0.563	0.575			
P	0.356	0.45	0.353	0.453	0.75			

2.2. Inclusion and exclusion criteria

2.2.1. Inclusion criteria

(1) Diagnosed with primary liver cancer at terminal stage according to clinical standards [9].

(2) Mentally clear and able to communicate normally.

(3) Not participating in other similar clinical studies.

(4) Patients or family members voluntarily enrolled and signed informed consent.

2.2.2. Exclusion criteria

(1) Severe organ failure (brain, heart, kidney, etc.).

(2) Cognitive impairment

(3) Illiterate

(4) Withdrew midway or died during the study

(5) Expected survival <30 days

2.3. Methods

The control group received routine nursing, including:

(1) Health education: Providing basic health education after admission, verbally explaining liver cancer-related knowledge, treatment plans, and daily precautions to enhance self-understanding and management, along with dietary guidance.

(2) Medication nursing: Instructing and supervising patients to take medications as prescribed, promptly reporting adverse reactions, monitoring vital signs, and notifying physicians for obvious discomfort.

(3) Psychological intervention: Face-to-face communication at least once a week (about 20 minutes each time) to understand patients' inner feelings and provide guidance for poor mental states.

The observation group, however, received routine nursing plus spiritual care nursing based on the four-full framework.

(1) Physical care: Strengthening communication with patients (2–3 face-to-face interactions weekly), assessing cancer pain scientifically, and relieving pain through scheduled medication, distraction, music therapy, and physical therapy following the three-step analgesic ladder principle; Creating a quiet and comfortable ward environment, providing personalized dietary guidance with high-protein and easily digestible meals to ensure nutritional support.

(2) Psychological care: Monitoring emotional changes daily, communicating with patients in a friendly and patient manner, encouraging them to express their thoughts, and organizing peer support meetings; Using WeChat, Douyin, etc., to record daily experiences, while advising family members to accept reality, provide companionship, help set and achieve goals, and maintain a meaningful life.

(3) Social support: Establishing hospice care wards with professional nursing teams and comprehensive medical equipment to provide all-around social support. Training family and friends on visiting skills to offer positive spiritual support and help patients fulfill unmet wishes.

(4) Spiritual care: Encouraging patients to recall meaningful life experiences to recognize their value; Conducting death education (twice weekly) via films, discussions, and reading materials to foster a healthy attitude toward death; Supporting religious practices for patients with faith to provide spiritual comfort.

Both groups are intervened for 4 weeks.

2.4. Observation indicators

(1) Death attitude: Assessed using the Death Attitude Profile Scale before and after intervention, including five dimensions: death avoidance, death fear, escape acceptance, natural acceptance, and approach acceptance (scored 1–5, higher scores indicating stronger tendency) [10].

(2) Spiritual status: Evaluated using the Functional Assessment of Chronic Illness Therapy-Spiritual Scale, covering three dimensions (meaning, belief, peace), with 0–4 points per item (total 48 points, higher scores indicating better spiritual health) [11].

(3) Psychological distress: Measured by the Distress Thermometer (0–10 points, ≥ 4 indicating significant distress) and Psychological Resilience Scale (0-40 points, higher scores indicating stronger resilience) [12, 13].

(4) Quality of life: Assessed using the WHO Quality of Life Scale, including six domains (psychological, physical, environmental, social relations, overall quality of life, and overall health status), with scores

calculated as the average of items ×4 (higher scores indicating better quality of life)[14].

2.5. Statistical analysis

Data are analyzed using SPSS 23.0. Measurement data (e.g., clinical characteristics, attitude scores) are expressed as (x±s) and compared via t-test. Count data are expressed as n (%) and analyzed via χ^2 test. A two-tailed $P < 0.05$ was considered statistically significant.

3. Results

3.1. Comparison of death attitudes

After intervention, the observation group had lower scores in death avoidance, death fear, and escape acceptance, and higher scores in natural acceptance and approach acceptance compared with the control group ($P < 0.05$), as seen in **Table 2**.

Table 2. Comparison of death attitudes (x±s, points)

Group	Time	Observation (n=60)	Control (n=60)	t	P
Death avoidance	Pre-intervention	20.82 ± 3.16	20.57 ± 3.13	0.435	0.664
	Post-intervention	16.77 ± 2.82a	18.33 ± 3.04a	2.914	0.004
Death fear	Pre-intervention	30.25 ± 4.11	30.57 ± 4.13	0.425	0.671
	Post-intervention	24.83 ± 3.49a	26.65 ± 3.62a	2.804	0.006
Escape acceptance	Pre-intervention	21.87 ± 2.43	22.03 ± 2.51	0.355	0.723
	Post-intervention	18.35 ± 2.18a	19.40 ± 2.25a	2.596	0.011
Natural acceptance	Pre-intervention	14.77 ± 2.53	14.55 ± 2.51	0.478	0.633
	Post-intervention	19.68 ± 2.93a	18.28 ± 2.86a	2.648	0.009
Approach acceptance	Pre-intervention	30.65 ± 4.74	31.42 ± 4.76	0.888	0.376
	Post-intervention	39.57 ± 5.56a	37.08 ± 5.44a	2.48	0.015

*Note: aP<0.05 vs. pre-intervention in the same group.

3.2. Comparison of spiritual status

After intervention, all spiritual status scores increased in both groups ($P < 0.05$), with more significant improvements in the observation group ($P < 0.05$), as shown in **Table 3**.

Table 3. Comparison of spiritual status (x±s, points)

Group	Meaning		Belief		Peace	
	Pre	Post	Pre	Post	Pre	Post
Observation (n=60)	9.25 ± 1.63	11.75 ± 1.93a	10.17 ± 1.66	12.18 ± 1.52a	5.60 ± 0.95	8.03 ± 1.47a
Control (n=60)	9.07 ± 1.61	10.88 ± 1.87a	9.87 ± 1.64	11.53 ± 1.45a	5.85 ± 0.98	7.25 ± 1.39a
t	0.609	2.508	0.996	2.397	1.419	2.986
P	0.544	0.013	0.321	0.018	0.159	0.003

*Note: aP<0.05 vs. pre-intervention in the same group.

3.3. Comparison of psychological distress

The observation group had lower distress thermometer scores and higher psychological resilience scores than the control group after intervention ($P < 0.05$), as shown in **Table 4**.

Table 4. Comparison of psychological distress (x±s, points)

Group	Distress thermometer		Psychological resilience	
	Pre	Post	Pre	Post
Observation (n=60)	6.88 ± 0.86	5.43 ± 0.68a	21.67 ± 3.34	32.85 ± 4.68a
Control (n=60)	7.03 ± 0.91	5.85 ± 0.71a	22.15 ± 3.38	30.63 ± 4.47a
t	0.928	3.309	0.782	2.657
P	0.355	0.001	0.436	0.009

*Note: aP<0.05 vs. pre-intervention in the same group.

3.4. Comparison of quality of life

The observation group had significantly higher scores in all quality of life domains than the control group after intervention ($P < 0.05$), as shown in **Table 5**.

Table 5. Comparison of quality of life (x±s, points)

Group	Time	Observation (n=60)	Control (n=60)	t	P
Psychological	Pre	5.05 ± 0.76	5.13 ± 0.77	0.573	0.568
	Post	8.40 ± 1.28a	7.83 ± 1.04a	2.677	0.008
Physical	Pre	5.23 ± 0.79	5.47 ± 0.82	1.633	0.105
	Post	8.83 ± 1.35a	8.25 ± 1.27a	2.424	0.017
Environmental	Pre	6.43 ± 0.97	6.21 ± 0.94	1.262	0.21
	Post	10.42 ± 1.68a	9.70 ± 1.55a	2.44	0.016
Social relations	Pre	4.48 ± 0.55	4.62 ± 0.57	1.369	0.174
	Post	9.28 ± 1.42a	8.62 ± 1.31a	2.646	0.009
Overall quality of life	Pre	5.47 ± 0.81	5.25 ± 0.79	1.506	0.135
	Post	8.93 ± 1.37a	8.40 ± 1.29a	2.182	0.031
Overall health status	Pre	5.15 ± 0.78	5.02 ± 0.75	0.931	0.354
	Post	8.58 ± 1.29a	8.05 ± 1.23a	2.303	0.023

*Note: *aP*<0.05 vs. pre-intervention in the same group.

4. Discussion

Studies have shown that terminally ill cancer patients face enormous physical and psychological pain due to their condition, and as death approaches, their physiological and psychological stress responses gradually intensify, leading to a sharp decline in their quality of life and suffering in their remaining days [15]. To effectively alleviate the physical and psychological pain of terminally ill cancer patients and enable them to spend each day with dignity in their final moments, there is an urgent need to find more scientific and reasonable clinical nursing

solutions. Conventional nursing models for cancer patients often focus only on symptom improvement, resulting in single-dimensional nursing measures and suboptimal intervention effects [16]. Spiritual care nursing based on the "Four Wholes Framework" is a new nursing model that provides more comprehensive spiritual care to patients through four dimensions: physical, psychological, social, and spiritual, significantly improving their physical and mental health and thus their quality of life [17].

The results of this study show that compared with the control group, the observation group had lower scores in death avoidance, death fear, and escape acceptance on the Death Attitude Description Scale after intervention, while scoring higher in natural acceptance and approach acceptance. This indicates that spiritual care nursing based on the "Four Wholes Framework" can effectively alleviate the fear of death in terminally ill liver cancer patients and help them gradually accept and face death. Terminally ill liver cancer patients often have a strong fear of death due to the dual influence of physical and psychological pain, leading to irrational perceptions of life and death, and thus enormous mental stress [18]. In this study, the "Four Wholes Framework"-based spiritual care nursing provided multi-faceted nursing interventions such as psychological intervention, social support, and spiritual care. On the one hand, it effectively alleviated their negative emotions and psychological stress responses, thereby reducing their fear of death. On the other hand, it helped patients establish correct views on life and death, enabling them to face death with a more positive attitude and spend their final days meaningfully.

This study also shows that compared with the control group, the observation group had higher scores in all dimensions of spiritual health and psychological resilience, and lower scores in psychological distress, indicating that implementing "Four Wholes Framework"-based spiritual care nursing for terminally ill liver cancer patients can effectively improve their spiritual health and psychological resilience while reducing their psychological pain. Spiritual health is a mental state of harmonious connection with society, others, and nature, rooted in an individual's affirmation of self-worth and the meaning of life, with inherent strength. This state focuses on the individual's subjective experience of thoughts, beliefs, and inner emotions, and a higher level of spiritual health helps improve patients' physical and mental health [19]. In this study, the spiritual care nursing based on the "Four Wholes Framework" provided spiritual-level nursing interventions to help patients recognize their own value, rediscover the meaning of life, and establish a positive outlook on life, thereby maintaining inner peace before death and improving their spiritual health.

Additionally, by providing psychological care and social support, this study helped patients effectively reduce physical and psychological discomfort, while making them feel the warmth from family, friends, and society, maintaining a positive mental state, thereby enhancing their psychological resilience and reducing psychological pain. In this study, the observation group had higher scores in all aspects of quality of life after intervention compared with the control group, suggesting that "Four Wholes Framework"-based spiritual care nursing helps improve the quality of life of terminally ill liver cancer patients, which may be related to the reduction in psychological pain and the improvement in spiritual health after intervention. Zhang *et al.* found that implementing physical-psychological-social-spiritual nursing for terminally ill cancer patients significantly improved their mental health and quality of life, corroborating the results of this study [20].

5. Conclusion

In conclusion, implementing "Four Wholes Framework"-based spiritual care nursing for liver cancer patients can effectively alleviate their fear and avoidance of death, improve their spiritual health and psychological resilience,

reduce their psychological pain, and enhance their quality of life.

Disclosure statement

The authors declare no conflict of interest.

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