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# A study on the influence of applied psychological nursing intervention on psychological stress and quality of life of terminally ill elderly cancer patients

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**Abstract: Objective:** To investigate the effects of psychological nursing combined with palliative care on psychological stress and quality of life in elderly patients with malignant tumors. **Methods:** A total of 120 terminally ill elderly patients with malignant tumors were randomly assigned to an observation group ( $n = 60$ ) or a control group ( $n = 60$ ). The control group received palliative care, whereas the observation group received psychological nursing in addition to palliative care. Psychological stress and quality of life were compared between groups after the intervention. Statistical analyses were performed using SPSS 26.0, employing  $t$ -tests or  $\chi^2$  tests as appropriate. **Results:** After the intervention, both groups showed significant reductions in pain intensity, pain beliefs, and the impact of pain on activities, along with increased satisfaction with pain control. The observation group demonstrated significantly greater improvements than the control group ( $P < 0.05$ ). Quality-of-life scores increased significantly in both groups, with larger improvements in the observation group ( $P < 0.05$ ). Sleep indicators also improved: actual sleep duration increased, sleep latency shortened, and Pittsburgh Sleep Quality Index scores decreased, with more pronounced changes in the observation group ( $P < 0.05$ ). Furthermore, scores for anxiety (HAMA), depression (HAMD), cancer-related fatigue, and dignity-related dimensions (social support, spiritual peace, independence, psychological status, and symptom distress) all decreased significantly in both groups, with greater reductions in the observation group ( $P < 0.05$ ). **Conclusion:** Psychological nursing combined with palliative care significantly reduces psychological stress, relieves pain, improves cancer-related fatigue, enhances sleep quality, and promotes dignity among terminally ill elderly patients with malignant tumors. This integrated approach shows considerable clinical value.

**Keywords:** malignant tumor; psychological nursing; palliative care; elderly; psychological stress

## 1. Introduction

With the acceleration of global aging, malignant tumors have become one of the major diseases affecting the health of the elderly population. According to data from the World Health Organization (WHO), cancer is the second leading cause of death worldwide, with its incidence and mortality rates rising significantly among older adults [1]. The terminal phase of malignant tumors refers to the advanced stage of cancer, typically accompanied by severe physical symptoms and marked psychological distress [2]. As defined by the WHO, the life expectancy of terminally ill patients is usually within six months. During this period, patients face not only

physical pain caused by the disease but also complex psychological, emotional, and social challenges [3]. They often go through stages of denial, anger, bargaining, depression, and acceptance. When patients recognize that the disease cannot be cured, they may develop an intense fear of death, which may stem from fear of the unknown or unwillingness to part from loved ones. This fear may lead to persistent anxiety and psychological distress, directly affecting their quality of life. Additionally, studies have shown that approximately 70% of patients with advanced cancer experience severe psychological stress in the terminal stage, which not only influences their end-of-life experience but also imposes a considerable emotional burden on family members [4]. Psychological stress may further disrupt neuroendocrine function, weaken immunity, and negatively affect disease progression.

Quality of life is a crucial indicator for evaluating the health status and overall well-being of terminally ill elderly cancer patients, covering physical, psychological, social, and functional dimensions. For elderly individuals in the terminal stage, improving their quality of life—enabling them to maintain dignity, reduce suffering, and experience comfort and support—is a central aim of medical and nursing care. Psychological nursing interventions address the psychological characteristics and needs of patients by applying structured psychological methods to help them adjust their emotional state and alleviate stress responses [5]. With the continuous evolution of modern medical care, psychological nursing has gained increasing recognition, becoming an essential component of comprehensive cancer care. For terminally ill elderly cancer patients, psychological nursing can strengthen emotional resilience, improve coping abilities, and help them face disease progression and end-of-life issues in a more adaptive manner [6,7].

Palliative care focuses on relieving suffering and improving the quality of life of patients and their families through holistic physical, psychological, social, and spiritual support. By integrating symptom management with emotional and spiritual support, palliative care can significantly enhance the overall well-being of patients [8]. However, traditional palliative care often emphasizes physiological symptom control while paying insufficient attention to psychological needs, resulting in persistently high levels of anxiety and depression among many terminally ill patients [9]. Therefore, incorporating targeted psychological interventions into palliative care is of great importance.

Although previous studies have explored psychological nursing in cancer care, systematic research focusing on terminally ill elderly cancer patients remains limited. Therefore, this study aims to investigate the effect of psychological nursing combined with palliative care on psychological stress and quality of life in terminally ill elderly cancer patients, with the goal of providing evidence-based support and improving nursing practices for this population.

## **2. Materials and methods**

### **2.1. General information**

A total of 120 terminally ill elderly patients with malignant tumors were randomly selected and divided into an observation group ( $n = 60$ ) and a control group ( $n = 60$ ) using the random number table method. Inclusion criteria: (1) All patients

were in the terminal stage of malignant tumors; (2) The estimated survival was more than 1 month but less than 3 months; (3) The patients were conscious and had normal communicative and cognitive abilities; (4) The patients were 60 years old or older; (5) All were informed and voluntarily participated in the study. Exclusion criteria: (1) Patients with critical illness or severe disability; (2) Patients who were unable to complete the scale assessment independently. Study personnel had obtained the written informed consent from the patients prior to the study. The study was conducted in compliance with the ethical principles of the Declaration of Helsinki and applicable local regulatory requirements.

Because the psychological nursing intervention required direct communication, emotional support, and behavioral guidance, blinding of patients and nursing staff was not feasible in this study. To minimize potential bias, outcome assessors and data analysts were blinded to group allocation and worked only with coded data. In addition, the sample size was determined based on a preliminary effect-size estimation. Using the difference in HAMD score reduction between groups observed in a pilot sample (effect size  $d = 0.55$ ), a two-tailed  $\alpha = 0.05$ , and power = 0.80, the minimum required sample size was calculated to be 102 participants (51 per group). Considering a potential attrition rate of approximately 15% in terminally ill patients, the final target sample size was set at 120 (60 per group). Furthermore, no participants were lost to follow-up during the 1-month intervention period, and the final analyses included all 120 patients.

## **2.2. Methods**

The control group received palliative care.

1) Condition assessment: A complete health record was established for each patient, including detailed clinical information and an assessment of current symptoms, quality of life, and emotional status. A targeted nursing plan was then formulated.

2) Psychological intervention: (a) Cognitive support: Family members were comforted appropriately and informed about the positive role of family support in the patient's well-being. With the family's consent, patients were informed of their condition in an acceptable manner. Emotional changes were closely monitored, and timely psychological counseling and encouragement were provided. Families were encouraged to share memorable personal experiences to help patients recognize their self-worth. (b) Emotional support: Nurses assessed each patient's psychological state and communicated with respect and openness. Patients were guided to express their inner thoughts, identify the causes of negative emotions, and receive targeted psychological counseling. A quiet and comfortable environment was provided, and soothing music was offered according to the patient's preference. Religious beliefs were respected and supported. Attention-distraction techniques were also applied to alleviate discomfort. (c) Social support: Nurses assessed the patient's social and family relationships, encouraged increased communication and companionship from family members, and suggested participation in peer-support activities when appropriate. Light social activities and simple games were organized to reduce psychological stress. (d) Spiritual care: With family consent, end-of-life education was provided. Nurses

explored patients' attitudes toward death in a sensitive manner and used supportive guidance to reduce fear and promote acceptance.

3) Touch care: Nurses held the patient's hands to convey comfort and support, combed their hair gently, and provided light scalp massage to promote relaxation.

The observation group received psychological nursing in addition to the same palliative care as the control group. Psychological nursing included several coordinated components.

1) Building a therapeutic relationship: Nurses respected each patient's personality, rights, and wishes, understood their end-of-life psychological characteristics, and communicated sincerely without concealing medical information.

2) Stage-specific psychological care: Interventions were tailored to the patient's psychological stage—denial, anger, bargaining, depression, or acceptance. For example, in the denial stage, nurses avoided challenging the patient's defense mechanisms and instead offered gentle reassurance. In the depression stage, nurses provided supportive counseling, encouraged emotional expression, and used empathetic communication to reduce distress. Religious needs were respected and supported. Relaxation techniques, such as deep breathing and progressive muscle relaxation, were also applied. Family members were trained in basic psychological support techniques and encouraged to participate in daily care and emotional communication.

3) Daily living care: Families were instructed to assist patients with regular bathing and clothing changes to maintain comfort and cleanliness. All psychological nursing interventions were delivered by two senior nurses with more than five years of experience in oncologic palliative care. Before the study began, both nurses completed a standardized 20-hour training program covering supportive psychotherapy, communication skills, and emotional guidance. Interventions were delivered once daily for 30–40 min over the entire 1-month period, with family-involved sessions provided at least twice weekly. To enhance clarity, the core components of the psychological nursing intervention are summarized in **Table 1**.

**Table 1.** Core components of the psychological nursing intervention.

| Core component                       | Key measures                                                                                                                        | Primary objectives                                                          |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Building a therapeutic relationship  | Respecting patient autonomy, open communication, understanding end-of-life psychological characteristics                            | Establish trust, reduce fear, promote psychological safety                  |
| Stage-specific psychological support | Tailored care based on denial, anger, bargaining, depression, acceptance stages; supportive counseling; guided emotional expression | Address stage-specific needs, reduce emotional distress, enhance coping     |
| Cognitive and emotional support      | Cognitive reframing, emotional counseling, attention-distraction techniques, soothing environment, music therapy                    | Reduce negative cognition and emotional burden, improve emotional stability |
| Relaxation training                  | Deep breathing, progressive muscle relaxation                                                                                       | Reduce physiological tension, lower arousal, improve sleep                  |
| Family involvement                   | Family education, communication guidance, encouraging companionship, participation in care                                          | Enhance social support, strengthen connectedness, improve dignity           |
| Spiritual and existential care       | Discussion of death-related attitudes, supportive guidance, respecting religious beliefs                                            | Reduce existential distress, promote acceptance, enhance spiritual peace    |
| Daily living support                 | Assistance with hygiene, comfort care, maintaining daily routines                                                                   | Improve physical comfort and quality of life                                |

A predefined intervention manual guided all procedures, and intervention logs were completed after each session to ensure fidelity. A one-month follow-up period was selected based on the clinical characteristics of terminally ill elderly cancer patients, whose expected survival typically ranges from one to three months. A longer follow-up was not feasible due to rapid functional decline and the high risk of loss to follow-up. This interval ensured data completeness while allowing for reliable evaluation of short-term intervention effects. Patients were monitored throughout the intervention for any adverse events, including emotional deterioration, acute distress, refusal to participate, or withdrawal. Nursing staff recorded any such events and provided timely support if needed. No adverse events occurred, and no participants discontinued the intervention.

## **2.3. Observation indicators**

### **2.3.1. Pain level**

The “American Pain Society Patient Outcomes Questionnaire” [10] was used to assess the pain levels of patients before and 1 month after the intervention. The questionnaire includes the following aspects: pain intensity (with a full score of 30 points, where a higher score indicates more severe pain), pain beliefs (with a full score of 35 points, where a higher score means poorer beliefs), impact of pain on activities (with a full score of 30 points, where a higher score denotes a greater impact of pain on patients’ activities), and satisfaction with pain control (with a full score of 18 points, where a higher score represents higher patient satisfaction).

### **2.3.2. Quality of life**

The functional assessment of cancer therapy-general (FACT-G) [11] was employed to assess the quality of life of patients before and one month after the intervention. This scale comprises function (with a full score of 28 points), social/family (28 points), physical condition (28 points), and emotion (24 points), with a total of 27 items. A higher score denotes a better quality of life for the patients.

### **2.3.3. Sleep quality**

The sleep quality of the two groups was recorded before the intervention and one month after the intervention. The recorded indicators included actual sleep duration and sleep latency. Additionally, the Pittsburgh sleep quality index (PSQI) [12] was utilized to assess sleep quality, including 7 items with a total score of 21 points. A higher score indicates more severe sleep disorders.

### **2.3.4. Comparison of psychological stress state and cancer-related fatigue**

The Hamilton anxiety scale (HAMA) [13] and the Hamilton depression scale (HAMD) [14] were used to assess the psychological stress state of patients pre-intervention and one month post-intervention. The HAMD consists of 17 items. A score of over 17 is considered indicative of depression, and the higher the score, the more severe the depression. The HAMA comprises 14 items, and each item is rated using a 5-level scoring method: 4 points for extremely severe, 3 points for severe, 2 points for moderate, 1 point for mild, and 0 points for no symptoms. A score of 14 or above is considered indicative of anxiety.

According to the literature [15], the cancer-related fatigue state of patients was assessed pre-intervention and one month post-intervention. The assessment included three aspects: cognition (3 items), emotion (4 items), and physical condition (7 items). Each item is scored using the Likert 5-level scoring method: 5 points for “very much”, 4 points for “quite a bit”, 3 points for “somewhat”, 2 points for “a little”, and 1 point for “not at all”. The higher the score, the more fatigued the patient.

### **2.3.5. Comparison of dignity scores**

The patient dignity inventory (PDI) [16] was adopted to assess the patients’ sense of dignity before the intervention and one month following the intervention. The PDI consists of 25 items across five dimensions: social support, spiritual peace, independence, psychological state, and symptom distress. With a 5-level scoring method, the total score is 125 points. The higher the score, the lower the patients’ sense of dignity.

## **2.4. Statistical methods**

SPSS 26.0 software was introduced for data processing. For unordered categorical data, the  $\chi^2$  test was used. Measurement data were represented as ( $\bar{x} \pm s$ ). The paired-samples *t*-test was applied to analyze the measurement data within the group, and the independent-samples *t*-test was used for the measurement data between groups. A *P*-value less than 0.05 was considered to indicate a statistically significant variance.

Prior to performing parametric tests, the normality of continuous variables was assessed using the Shapiro–Wilk test, and homogeneity of variance was examined using Levene’s test. All variables met the assumptions for the applied statistical tests. To assess the robustness of the findings, sensitivity analyses were conducted by repeating the statistical tests after excluding potential outliers (values exceeding 3 SD from the mean). The sensitivity analyses yielded results consistent with the primary analyses, indicating good robustness of the study conclusions.

## **3. Results**

### **3.1. Comparison of general data**

In the observation group, there were 60 patients (32 males and 28 females) with an average age of ( $72.56 \pm 8.14$ ) years. Among them, there were 12 cases of lung cancer, 14 cases of gastric cancer, 13 cases of esophageal cancer, 10 cases of bladder cancer, and 11 cases of prostate cancer. There were 21 cases with an educational level of secondary school or below, and 39 cases with an educational level above secondary school. In the control group, there were also 60 patients, including 31 males and 29 females, with an average age of ( $73.49 \pm 8.16$ ) years. There were 13 cases of lung cancer, 12 cases of gastric cancer, 14 cases of esophageal cancer, 9 cases of bladder cancer, and 12 cases of prostate cancer. There were 26 cases with an educational level of secondary school or below, and 34 cases with an educational level above secondary school. The baseline distributions of key demographic and clinical variables were similar between the two groups. Age showed comparable means and standard deviations ( $72.56 \pm 8.14$  vs.  $73.49 \pm 8.16$  years), and the proportions of gender, cancer

types, educational level, marital status, occupation, and length of hospital stay were also balanced. No significant differences were found across any baseline variable (all  $P > 0.05$ ), confirming that the two groups were comparable at baseline. See **Table 2**.

**Table 2.** Comparison of general data between the two groups of patients ( $n$ ).

|                                |                            | Observation Group ( $n = 60$ ) | Control Group ( $n = 60$ ) | $\chi^2/t$ | $P$   |
|--------------------------------|----------------------------|--------------------------------|----------------------------|------------|-------|
| Gender                         | Male                       | 32                             | 31                         | 0.033      | 0.855 |
|                                | Female                     | 28                             | 29                         |            |       |
| Age (years)                    |                            | $72.56 \pm 8.14$               | $73.49 \pm 8.16$           | 0.625      | 0.533 |
| Disease type                   | Lung cancer                | 12                             | 13                         | 0.327      | 0.988 |
|                                | Gastric cancer             | 14                             | 12                         |            |       |
|                                | Esophageal cancer          | 13                             | 14                         |            |       |
|                                | Bladder cancer             | 10                             | 9                          |            |       |
|                                | Prostate cancer            | 11                             | 12                         |            |       |
|                                |                            |                                |                            |            |       |
| Marital status                 | Married                    | 25                             | 23                         | 0.139      | 0.709 |
|                                | Unmarried/Divorced/Widowed | 35                             | 37                         |            |       |
| Education level                | High school and below      | 21                             | 26                         | 0.874      | 0.350 |
|                                | Above high school          | 39                             | 34                         |            |       |
| Occupation                     | Cadre                      | 15                             | 19                         | 0.657      | 0.418 |
|                                | Worker                     | 45                             | 41                         |            |       |
| Length of hospital stay (days) | 30–90                      | 26                             | 28                         | 0.135      | 0.714 |
|                                | $\geq 90$                  | 34                             | 32                         |            |       |

### 3.2. Analysis of pain improvement

Before the intervention, there were no substantial differences in the scores of pain intensity, pain beliefs, pain control satisfaction, and the impact of pain on activities between the two groups ( $P > 0.05$ ). After the intervention, the scores of pain intensity, pain beliefs, and the impact of pain on activities in both groups decreased significantly, while the score of pain control satisfaction heightened. Moreover, following the intervention, the scores of pain intensity, pain beliefs, and the impact of pain on activities in the observation group were notably lower than those in the control group, and the score of pain control satisfaction was higher than that in the control group ( $P < 0.05$ ), as displayed in **Table 3**.

**Table 3.** Analysis of pain improvement ( $\bar{x} \pm s$ , points).

| Group                          | Degree of pain   |                    | Pain belief      |                    | Satisfaction with pain control |                    | Impact of pain on activities |                    |
|--------------------------------|------------------|--------------------|------------------|--------------------|--------------------------------|--------------------|------------------------------|--------------------|
|                                | Pre-intervention | Post-intervention  | Pre-intervention | Post-intervention  | Pre-intervention               | Post-intervention  | Pre-intervention             | Post-intervention  |
| Observation Group ( $n = 60$ ) | $25.36 \pm 4.17$ | $18.14 \pm 3.55^*$ | $29.30 \pm 4.55$ | $22.15 \pm 3.64^*$ | $8.44 \pm 0.91$                | $14.26 \pm 2.58^*$ | $25.31 \pm 2.67$             | $17.14 \pm 3.15^*$ |
| Control Group ( $n = 60$ )     | $24.97 \pm 3.66$ | $20.14 \pm 2.38^*$ | $30.15 \pm 3.64$ | $25.17 \pm 3.48^*$ | $8.92 \pm 1.03$                | $12.34 \pm 2.61^*$ | $24.89 \pm 3.55$             | $20.16 \pm 4.07^*$ |
| $t$                            | 0.544            | 3.625              | 1.130            | 4.645              | 2.705                          | 4.052              | 0.732                        | 4.545              |
| $P$                            | 0.587            | <0.001             | 0.261            | <0.001             | 0.008                          | <0.001             | 0.465                        | <0.001             |

Note: Compared with pre-intervention levels,  $*P < 0.05$ .

### 3.3. Comparison of quality of life

Prior to the intervention, there were no remarkable differences in the scores of function, emotion, social/family, physical condition, and the total score between the two groups ( $P > 0.05$ ). Following the intervention, the scores of function, emotion, social/family, physical condition, and the total score in both groups were heightened dramatically. Furthermore, after the intervention, the scores of function, emotion, social/family, physical condition, and the total score in the observation group were higher than those in the control group ( $P < 0.05$ ), as presented in **Table 4**.

**Table 4.** Comparison of quality of life ( $\bar{x} \pm s$ , points).

| Group                          | Function         |                   | Emotion          |                   | Social/family    |                   | Physical condition |                   | Total score      |                   |
|--------------------------------|------------------|-------------------|------------------|-------------------|------------------|-------------------|--------------------|-------------------|------------------|-------------------|
|                                | Pre-intervention | Post-intervention | Pre-intervention | Post-intervention | Pre-intervention | Post-intervention | Pre-intervention   | Post-intervention | Pre-intervention | Post-intervention |
| Observation Group ( $n = 60$ ) | 12.34 $\pm$ 2.55 | 16.78 $\pm$ 2.41* | 12.14 $\pm$ 2.56 | 16.23 $\pm$ 2.57* | 16.25 $\pm$ 2.37 | 21.55 $\pm$ 3.47* | 14.23 $\pm$ 2.66   | 19.36 $\pm$ 2.44* | 54.96 $\pm$ 8.22 | 73.92 $\pm$ 8.97* |
| Control Group ( $n = 60$ )     | 12.17 $\pm$ 2.49 | 14.55 $\pm$ 2.32* | 12.58 $\pm$ 2.47 | 14.11 $\pm$ 2.18* | 16.97 $\pm$ 2.58 | 18.66 $\pm$ 2.49* | 14.18 $\pm$ 2.14   | 16.14 $\pm$ 2.58* | 55.90 $\pm$ 6.17 | 63.46 $\pm$ 7.21* |
| $t$                            | 0.369            | 5.164             | 0.958            | 4.873             | 1.592            | 5.241             | 0.113              | 7.024             | 0.708            | 7.040             |
| $P$                            | 0.712            | <0.001            | 0.340            | <0.001            | 0.114            | <0.001            | 0.910              | <0.001            | 0.480            | <0.001            |

Note: Compared with pre-intervention levels, \* $P < 0.05$ .

### 3.4. Sleep quality

There were no substantial differences in the actual sleep duration, sleep latency, and PSQI scores between the two groups prior to the intervention ( $P > 0.05$ ). After the intervention, the actual sleep duration of both groups was prolonged, the sleep latency was shortened, and the PSQI scores were lowered. Moreover, after the intervention, the actual sleep duration in the observation group was longer, the sleep latency was shorter, and the PSQI scores were lower than those in the control group ( $P < 0.05$ ), as exhibited in **Table 5**.

**Table 5.** Comparison of sleep quality between the two groups ( $\bar{x} \pm s$ ).

| Group                          | Actual sleep duration (h) |                    | Sleep latency (min) |                    | PSQI score (points) |                    |
|--------------------------------|---------------------------|--------------------|---------------------|--------------------|---------------------|--------------------|
|                                | Before intervention       | After intervention | Before intervention | After intervention | Before intervention | After intervention |
| Observation Group ( $n = 60$ ) | 5.01 $\pm$ 0.62           | 7.56 $\pm$ 0.84*   | 65.33 $\pm$ 7.18    | 41.07 $\pm$ 5.22*  | 16.44 $\pm$ 2.19    | 10.03 $\pm$ 2.57*  |
| Control Group ( $n = 60$ )     | 5.13 $\pm$ 0.65           | 6.23 $\pm$ 0.79*   | 64.29 $\pm$ 8.13    | 48.64 $\pm$ 5.31*  | 15.97 $\pm$ 2.53    | 11.87 $\pm$ 2.62*  |
| $t$                            | 1.035                     | 8.934              | 0.743               | 7.875              | 1.088               | 3.883              |
| $P$                            | 0.303                     | <0.001             | 0.459               | <0.001             | 0.279               | <0.001             |

Note: Compared with pre-intervention levels, \* $P < 0.05$ .

### 3.5. Comparison of psychological stress state and cancer-related fatigue

There were no significant variances in the scores of HAMD, HAMA, and each dimension of cancer-related fatigue between the two groups pre-intervention ( $P > 0.05$ ). Following the intervention, the scores of HAMD, HAMA, and each dimension of cancer-related fatigue in both groups decreased significantly. Moreover, after the

intervention, the above-mentioned scores in the observation group were lower than those in the control group ( $P < 0.05$ ), as shown in **Table 6**.

**Table 6.** Comparison of psychological stress state and cancer-related fatigue between the two groups ( $\bar{x} \pm s$ , points).

| Group                          | HAMD                |                    | HAMA                |                    | Cancer-related fatigue |                    |                     |                    |                     |                    |
|--------------------------------|---------------------|--------------------|---------------------|--------------------|------------------------|--------------------|---------------------|--------------------|---------------------|--------------------|
|                                |                     |                    |                     |                    | Cognitive fatigue      |                    | Emotional fatigue   |                    | Physical fatigue    |                    |
|                                | Before intervention | After intervention | Before intervention | After intervention | Before intervention    | After intervention | Before intervention | After intervention | Before intervention | After intervention |
| Observation Group ( $n = 60$ ) | 27.34 $\pm$ 3.69    | 12.56 $\pm$ 2.47*  | 25.46 $\pm$ 3.17    | 15.33 $\pm$ 2.62*  | 8.45 $\pm$ 0.92        | 5.12 $\pm$ 0.56*   | 15.66 $\pm$ 2.33    | 7.55 $\pm$ 0.84*   | 25.46 $\pm$ 2.87    | 13.45 $\pm$ 2.61*  |
| Control Group ( $n = 60$ )     | 28.55 $\pm$ 3.78    | 17.53 $\pm$ 2.64*  | 25.19 $\pm$ 3.55    | 18.97 $\pm$ 2.41*  | 8.59 $\pm$ 0.94        | 6.31 $\pm$ 0.78*   | 16.12 $\pm$ 2.74    | 10.22 $\pm$ 3.69*  | 25.34 $\pm$ 2.71    | 16.58 $\pm$ 2.49*  |
| $t$                            | 1.774               | 10.648             | 0.439               | 7.920              | 0.824                  | 9.600              | 0.991               | 5.465              | 0.235               | 6.721              |
| $P$                            | 0.079               | <0.001             | 0.661               | <0.001             | 0.411                  | <0.001             | 0.324               | <0.001             | 0.814               | <0.001             |

Note: Compared with pre-intervention levels, \* $P < 0.05$ .

### 3.6. Comparison of dignity scores

Before the intervention, no remarkable differences were noted in the scores of social support, spiritual peace, independence, psychological status, and symptom distress between the two groups ( $P > 0.05$ ). After the intervention, the scores of social support, spiritual peace, independence, psychological status, and symptom distress in both groups decreased significantly. Moreover, after the intervention, the above-mentioned scores in the observation group were lower than those in the control group ( $P < 0.05$ ), as displayed in **Table 7**.

**Table 7.** Comparison of dignity scores between the two groups ( $\bar{x} \pm s$ , points).

| Group                          | Social support      |                    | Spiritual peace     |                    | Independence        |                    | Psychological state |                    | Symptom distress    |                    |
|--------------------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|
|                                | Before intervention | After intervention | Before intervention | After intervention | Before intervention | After intervention | Before intervention | After intervention | Before intervention | After intervention |
| Observation Group ( $n = 60$ ) | 13.14 $\pm$ 1.62    | 5.74 $\pm$ 0.91*   | 4.12 $\pm$ 0.45     | 1.27 $\pm$ 0.45*   | 13.12 $\pm$ 1.98    | 7.14 $\pm$ 0.87*   | 23.41 $\pm$ 2.57    | 12.36 $\pm$ 2.05*  | 8.19 $\pm$ 0.96     | 5.36 $\pm$ 0.74*   |
| Control Group ( $n = 60$ )     | 13.27 $\pm$ 1.58    | 8.31 $\pm$ 1.05*   | 4.09 $\pm$ 0.51     | 2.33 $\pm$ 0.29*   | 13.29 $\pm$ 1.99    | 10.15 $\pm$ 1.88*  | 23.19 $\pm$ 2.58    | 16.42 $\pm$ 2.71*  | 8.22 $\pm$ 0.84     | 6.11 $\pm$ 0.63*   |
| $t$                            | 0.445               | 14.327             | 0.342               | 15.337             | 0.469               | 11.255             | 0.468               | 9.255              | 0.182               | 5.978              |
| $P$                            | 0.657               | <0.001             | 0.733               | <0.001             | 0.640               | <0.001             | 0.641               | <0.001             | 0.856               | <0.001             |

Note: Compared with pre-intervention levels, \* $P < 0.05$ .

## 4. Discussion

Elderly patients with advanced malignant tumors often experience pronounced psychological stress at the end of life, manifesting as anxiety, depression, hopelessness, and a loss of meaning. These psychological burdens significantly impair their quality of life and exacerbate the complexity of symptom management. Previous end-of-life care models—largely grounded in biomedical treatment—placed primary emphasis on physical symptom control while overlooking psychological, emotional, social, and

spiritual needs [17,18]. However, with evolving cultural attitudes and an increasing emphasis on dignity-conserving care, holistic psychosocial support has become a central component of contemporary palliative care in China.

The present study demonstrates that psychological nursing combined with palliative care leads to substantial improvements in pain perception, sleep quality, psychological stress, cancer-related fatigue, and dignity among terminally ill elderly cancer patients. To better interpret these improvements, it is essential to consider the psychological processes through which the intervention may exert its effects. Psychological nursing incorporates several therapeutic components—such as cognitive reframing, emotional regulation, supportive expression, meaning-oriented dialogue, and relaxation-based strategies—that are theoretically linked to changes in patients' emotional and behavioral responses to terminal illness [19,20]. These mechanisms provide a plausible explanatory pathway connecting the intervention to the multidimensional outcomes observed in this study. Psychological nursing provides structured emotional support, facilitates expression of fear and distress, restructures maladaptive cognitions about illness and death, and enhances coping capacity—findings consistent with prior studies emphasizing the centrality of emotional and existential support in terminal care [21–23]. Meanwhile, palliative care optimizes physical comfort through systematic symptom management, which reduces physiological triggers of stress and fatigue. The integration of psychosocial and symptom-focused care strengthens patients' sense of autonomy, connectedness, and spiritual peace—domains previously shown to be critical contributors to end-of-life well-being [24–26].

A more detailed consideration of potential mechanisms further clarifies the observed benefits. Cognitive reframing can help patients interpret pain and illness-related stimuli in a less threatening manner, reducing catastrophic thinking and restoring a sense of control over symptoms [27]. Emotional regulation and opportunities for supportive expression may alleviate persistent worry and hyperarousal, both of which contribute to anxiety and sleep disruption [28]. Relaxation training decreases physiological tension and sympathetic activation, thereby supporting improvements in sleep and fatigue [29]. Supportive communication and guided coping strategies enhance self-efficacy in symptom management, while meaning-centered and dignity-conserving approaches address existential concerns and reinforce a sense of identity, connection, and spiritual peace. Together, these processes offer a coherent mechanism through which psychological nursing exerts its impact when integrated with palliative care.

Consistent with earlier research, our results confirm that comprehensive psychosocial support can alleviate pain-related beliefs, reduce the functional impact of pain, and improve satisfaction with pain control. Psychological nursing helps patients reinterpret pain sensations, reduce catastrophizing, and build self-efficacy in coping with discomfort, whereas palliative care provides pharmacologic and non-pharmacologic methods to control pain and related symptoms. Together, these interventions contribute to more balanced perceptions of pain and better overall comfort.

The combined intervention also significantly improved sleep quality. Emotional distress and existential anxiety are known contributors to sleep disturbance in terminal

cancer patients. Through supportive communication and cognitive restructuring, psychological nursing reduces excessive worry and hyperarousal, while relaxation training helps regulate physiological tension. Palliative care further contributes by managing discomfort, optimizing the care environment, and involving family members to provide reassurance and companionship, which collectively create conditions conducive to restorative sleep [30].

Moreover, psychological nursing significantly reduced anxiety, depression, and cancer-related fatigue. These findings align with evidence showing that psychosocial interventions can modulate stress responses, improve emotional resilience, and reduce symptom burden [21–23]. The addition of palliative care augments these effects by addressing physical contributors to fatigue such as pain, dyspnea, and poor nutrition, thereby offering multidimensional relief. Improvements observed in dignity-related domains—including independence, spiritual peace, and social support—further support previous findings that holistic care promotes a sense of meaning, respect, and existential comfort at the end of life [24–26].

Although subgroup analyses based on age, cancer type, sex, or baseline psychological burden would have provided additional clinical insight, the limited sample size and relative homogeneity of our cohort rendered such stratified analyses statistically unreliable. As a result, this study was unable to examine whether certain subgroups might experience differential benefits from psychological nursing–assisted palliative care. Future multicenter studies with larger and more heterogeneous populations are needed to rigorously evaluate potential subgroup effects and to identify patient characteristics that may moderate treatment response. Another limitation is the inability to blind patients and caregivers because of the inherently interpersonal nature of psychological nursing, which may introduce subjective bias despite the blinding of outcome assessors and data analysts. Further methodological refinement in future research may help mitigate this challenge.

In summary, psychological nursing integrated with palliative care offers substantial benefits for elderly patients with advanced malignant tumors. By simultaneously addressing psychological, physiological, social, and spiritual dimensions, this combined approach improves emotional well-being, symptom burden, sleep quality, cancer-related fatigue, and dignity. These findings reinforce the importance of multidimensional supportive interventions in end-of-life oncology care and highlight the need for further research to refine personalized care models for this vulnerable population.

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