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Effectiveness of pain self-management support intervention in enhancing quality of life among cancer patients: A randomized controlled trial

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ABSTRACT

***Objective**: To evaluate the effectiveness of a pain self-management intervention on quality of life among cancer patients in Vinh Phuc Province six weeks post-discharge. Participants and Methods: A randomized controlled trial was conducted on 116 cancer patients at Vinh Phuc Provincial General Hospital (January–December 2023). The intervention, delivered through health education counseling, included pain-related education, skill-building, and self-care support. Data were collected at baseline and six weeks post-discharge. Statistical analyses were performed using SPSS 22.0 ($p < 0.05$). Baseline comparisons utilized the Independent Samples t-test, Chi-square test, and Fisher's exact test, while Paired t-test and Independent Samples t-test assessed within- and between-group differences. Results: The pain self-management intervention significantly improved the quality of life in cancer patients. In the intervention group, there were statistically significant differences in the mean scores of quality of life domains between pre-intervention and six weeks post-discharge ($p < 0.05$). Additionally, significant differences were observed in the mean scores between the intervention and control groups across most quality of life domains ($p < 0.05$). The effect sizes for quality of life domains ranged from moderate to high ($0.57 < Cohen's\ d < 0.98$). Conclusions: The pain self-management intervention effectively improved the quality of life in cancer patients. Integrating pain self-management support into cancer care is essential to help patients enhance their quality of life.*

***Keywords**: Quality of life, education, patients, pain self-management, cancer.*

INTRODUCTION

Cancer is a malignant disease characterized by the uncontrolled and disorganized proliferation of cells that evade the body's regulatory mechanisms [1]. In recent years, the global cancer incidence has been increasing at an alarming rate. According to the Global Cancer Observatory (GLOBOCAN 2020), approximately 19.3 million new cancer cases and nearly 10 million cancer-related deaths were reported worldwide [2]. In Vietnam, an estimated 182,000 new cancer cases were recorded in 2020, with approximately 122,690 deaths and around 353,826 individuals living with cancer. The cancer mortality rate remains

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relatively high at 126.04 per 100,000 population [3].

Pain is a prevalent and distressing symptom among cancer patients [4]. Despite the availability of various pain management strategies, including disease-specific treatments and pharmacological interventions, achieving effective pain control remains a significant challenge. Uncontrolled cancer pain can significantly deteriorate patients' quality of life [5] and in severe cases, it may lead to physical deterioration and mortality [1]. Therefore, beyond pain relief, enhancing quality of life is a fundamental objective in all interventions addressing cancer-related pain. In clinical oncology, pain management has traditionally centered on medical and pharmacological treatments, with comparatively less emphasis on educational interventions. However, evidence suggests that patient-centered education plays a critical role in optimizing pain management outcomes. A systematic review and meta-analysis by Bennett et al. (2009) demonstrated that educational interventions improve cancer pain management by fostering self-care, enhancing medication adherence, and increasing treatment efficacy [6]. Similarly, research by Koller et al. indicated that self-management interventions significantly reduce pain intensity, enhance self-efficacy, and improve overall quality of life by mitigating the impact of pain on daily activities [7].

In Vietnam, although the Ministry of Health issued the Palliative Care Guidelines (2022), pain management education interventions remain limited and insufficiently emphasized, including in Vinh Phuc province. According to a 2023 report by the Vinh Phuc Center for Disease Control, the province recorded 2,362 cancer patients, with an incidence rate of 202 cases per 100,000 population-higher than the national average [8]. This finding underscores the importance of enhancing palliative care, particularly cancer pain management, in Vinh Phuc.

Given this context, enhancing pain management education for cancer patients in Vinh Phuc is essential to promote active patient participation in pain control and improve their quality of life. Therefore, this study, "The Effectiveness of Pain Self-Management Support Interventions on Quality of Life in Cancer Patients in Vinh Phuc Province," was conducted to assess the impact of pain self-management support interventions on patients' quality of life six weeks post-discharge.

RESEARCH PARTICIPANTS AND METHODS

Research participants: This study included cancer patients receiving treatment at Vinh Phuc Provincial General Hospital.

Inclusion criteria: Patients aged 18 years or older. Diagnosed with cancer and experiencing pain symptoms. No cognitive impairment. Able to hear, speak, read, and write in Vietnamese.

Exclusion criteria: Eastern Cooperative Oncology Group (ECOG) or World Health Organization (WHO) performance status of 4. Pain primarily caused by other chronic conditions (e.g., gout, arthritis). History of cancer surgery within the past month. Inability to fully adhere to health education interventions and scheduled study assessments.

Research period: From January 2023 to December 2023.

Research location: The study was conducted at Vinh Phuc Provincial General Hospital and patients' homes.

Research design: This study employed a randomized controlled trial design.

Sample size: The required sample size was determined using the following formula:

$$n = Z^2_{(\alpha,\beta)} \frac{2s^2}{\Delta^2}$$

Where:

n: Required research sample size per group. s: Standard deviation derived from a previous study, calculated as (s1+s2)/2. Δ: Expected difference in mean pain scores between the intervention and control groups.

α: Type I error (set at 0.05). β: Type II error (set at 0.2). $Z_{(\alpha,\beta)}$: Standard normal value corresponding to the chosen α and β (7.9). Based on the study by Mahsa Musavi et al. (2021) [9] on the effectiveness of a pain management program for cancer patients, the standard deviations for the intervention and control groups were 0.64 and 0.69, respectively. Thus, the pooled standard deviation was calculated as: s = (s1+s2)/2 = (0.64 + 0.69)/2 = 0.66. The expected difference in mean pain scores between groups was Δ = 1.1. Applying these values to the formula, the minimum required sample size per group was 45 participants.

In practice, 116 patients meeting the inclusion criteria were recruited, with 58 patients per group.

Sampling method: A total sampling method was employed. All eligible cancer patients admitted to the hospital from January 2023 to August 2023 were recruited. Participants were then randomly assigned to either the intervention or control group using a lottery-based randomization method. Each eligible patient was assigned a sequential number, with even-numbered participants allocated to the intervention group and odd-numbered participants assigned to the control group. This process continued until both groups reached a total of 58 participants. This randomization approach ensured that group allocation was unbiased and equally distributed, thereby enhancing the validity and reliability of the study findings.

Research instruments: Data were obtained through self-administered questionnaires and medical record reviews. The questionnaire comprised two main sections: (1) General information: A total of 16 items capturing demographic and clinical characteristics. (2) Quality of Life Assessment: European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30), Vietnamese Version: A 30-item instrument assessing multiple QoL domains. Items 1 to 28 were rated on a 4-point Likert scale (1–4), while items 29 and 30 were rated on a 7-point Likert scale (1–7) [10]. The questionnaire includes the following scales:

- Functioning scales: Physical functioning (items 1–5), Role functioning (items 6–7), Social functioning (items 26–27), Emotional functioning (items 21–24), and Cognitive functioning (items 20, 25).

- Symptom scales/items: Pain (items 9, 19), Fatigue (items 10, 12, 18), Nausea and vomiting (items 14–15), Dyspnea (item 8), Insomnia (item 11), Appetite loss (item 13), Constipation (item 16), Diarrhea (item 17).

- Financial difficulties: Item 28.

- Global health status/quality of life: Items 29 and 30.

Data collection time points: Baseline (T0, before the intervention) and six weeks post-discharge (T1).

Evaluation criteria

Quality of life assessment: Quality of life (QoL) was evaluated using the EORTC

QLQ-C30 questionnaire, with scores ranging from 0 to 100.

- EORTC QLQ-C30 Scoring Method:

+ Raw Score (RS): The mean score of all items within a given domain, calculated as follows:

RS = (Q1 + Q2 + ... + Qn)/n

+ Standardized Score Calculation: The raw score was converted to a 0–100 scale using domain-specific formulas:

Functional domains: Score = [1 – (RS – 1)/3] x 100; (A higher score indicates better quality of life).

Symptom and financial domains: Score = [(RS – 1)/3] x 100; (A higher score indicates a greater negative impact on QoL).

Global health status: Score = [(RS – 1)/6] x 100; (A higher score indicates better overall QoL) [11].

Effect Size of the Intervention [12]*:* The effect size of the intervention was measured using Cohen's d, calculated as:

Cohen's d = (mean of group 1 – mean of group 2)/Pooled standard deviation.

Effect size interpretation: Small effect: $0.2 < d < 0.5$; medium effect: $0.5 \leq d < 0.8$; large effect: $d \geq 0,8$.

Intervention program and intervention materials

Intervention Program: The intervention program consisted of a pain self-management support program designed for patients in the intervention group. This program was structured around three core strategies: information provision, skill-building, and supportive care.

Intervention Components: Patients in the intervention group received direct health education from nurses prior to hospital discharge. The intervention included the following components: In-hospital education sessions (conducted in the morning or afternoon): Session 1: Information provision. Session 2: Skill-building for pain management. Home-based health education session (supportive care at home). Four follow-up phone calls at weeks 2, 3, 4, and 5 post-discharge.

Duration: Each health education session lasted 60 minutes, while each follow-up call lasted 10–15 minutes.

The program covered: Information provision: Cancer-related pain, pharmacological pain management, non-pharmacological pain relief methods, and lifestyle recommendations to enhance well-being. Skill-building: Monitoring, assessing, and reporting pain episodes, effective use of analgesics, and developing a personalized pain control plan. Supportive care: Providing ongoing guidance and encouragement for pain management.

Additionally, patients in the intervention group received a printed educational booklet compiled from published national and international sources [13].

Patients in the control group received standard treatment and care. After completing the study, they were also offered the pain self-management support program upon request.

Data processing method: Data were analyzed using SPSS version 22.0, with a significance level set at $p = 0.05$. Descriptive statistics were employed to present frequencies and percentages.

Comparative analyses were conducted as follows: Independent Samples t-test, Chi-square test, and Fisher's exact test were used to compare baseline characteristics between the two groups. Paired t-test and Independent Samples t-test were applied to assess pre- and post-intervention mean score differences within and between groups.

Research ethics: The study was approved by the Ethics Committee of Nam Dinh University of Nursing (certificate number 2676/GCN-HDDD, dated October 22, 2021). All participants provided informed consent to participate in the study, and their personal information was handled with strict confidentiality. Data collection and processing were conducted with accuracy and transparency. The research findings were disseminated solely through scientific publications.

RESULT

Table 1. Comparison of patient characteristics between the intervention and control groups (n = 58)

Variable		Intervention group	Control group	p
Age (Mean ± SD)		63.67 ± 10.63	62.57 ± 9.23	0.55[a]
Gender n (%)	Male	48 (82.8)	42 (72.4)	0.18[b]
	Female	10(17.2)	16 (27.6)	
Qualification n (%)	High school or lower	53 (91.4)	56 (96.6)	0.44[c]
	Vocational education, university	05 (8.6)	02 (3,4)	
Occupation n (%)	Farmer	36 (58.6)	38 (65.5)	0.14[c]
	Sales/services	01 (1.7)	06 (10.3)	
	Factory worker	05 (8.6)	05 (8.6)	
	Skilled labor	03 (5.2)	0 (0.0)	
	Public servant	01 (1.7)	0 (0.0)	
	Housewife	01 (1.7)	01 (1.7)	
	Other	13 (22.4)	08 (13.8)	
Marital status n (%)	Married	51 (87.9)	50 (86.2)	1.00[c]
	Never married	0 (0.0)	01 (1.7)	
	Separated/divorced/ widowed	07 (12.1)	07 (12.1)	
ECOG performance status	Good performance status (0-1)	37 (63.8)	29 (50)	0.19[c]
	Poor performance status (2-4)	21 (36.20	29 (50)	

Note: ([a])Independent sample test, ([b]) Chi-square test; ([c])Fisher's exact test.

The results indicated no significant differences between the groups in age, gender, qualification, occupation, marital status, or ECOG performance status ($p > 0.05$).

Table 2. Comparison of environmental factors between intervention and control groups (n = 58)

Variable		Intervention group	Control group	p [c]
Place of residence: n(%)	Urban areas	04 (6.9)	02 (3.4)	0.48
	Rural areas	38 (65.5)	35 (60.3)	
	Mountainous/midland areas	16 (27.6)	21 (36.3)	
Health Insurance: n (%)	With health insurance	58 (100)	57 (98.3)	1.00
	No health insurance	0 (0.0)	01 (1.7)	
Primary caregiver: n (%)	Father or mother	01 (1.7)	0 (0.0)	0.36
	Wife or husband	34 (58.6)	27 (46.6)	
	Son	19 (32.8)	27 (46.6)	
	Other relatives	04 (6.9)	04 (6.9)	
Economic conditions: n (%)	Low-income household	04 (6.9)	01 (1.7)	0.32
	Lower-middle-income household	07 (12.1)	11 (19.0)	
	Middle-income household	44 (75.9)	45 (77.6)	
	High-income household	03 (5.1)	01 (1.7)	

Note: [c]Fisher's exact test.

Table 2 presents no statistically significant differences between cancer patients in the intervention and control groups regarding place of residence, health insurance, primary caregiver, or economic conditions ($p > 0.05$).

Table 3. Comparison of health and disease-related factors between the intervention and control groups (n = 58)

Variable		Intervention group	Control group	p[c]
Cancer type: n (%)	Liver	08 (13.8)	06 (10.3)	0.92
	Lung	17 (29.3)	21 (36.2)	
	Stomach	08 (13.8)	08 (13.8)	
	Breast	03 (5.2)	04 (6.9)	
	Colorectal cancer	05 (8.6)	03 (5.2)	
	Nasopharyngeal cancer	04 (6.9)	02 (3.4)	
	Other	13 (22.4)	14 (21.1)	

Variable		Intervention group	Control group	p[c]
Disease stage: n (%)	Stage I	02 (3.4)	01 (1.7)	0.69
	Stage II	13 (22.4)	09 (15.5)	
	Stage III	06 (10.3)	08 (13.8)	
	Stage IV	37 (63.8)	40 (69.0)	
Treatment modality: n (%)	Chemotherapy/targeted therapy	21 (36.2)	12 (20.7)	0.42
	Surgery	01 (1.7)	01 (1.7)	
	Surgery combined with radiotherapy/chemotherapy/ radio	05 (8.6)	05 (8.6)	
	Therapy + chemotherapy	06 (10.3)	07 (12.10)	
	Chemotherapy and radiotherapy Palliative care	25 (43.1)	33 (56.9)	
Duration of illness: n (%)	Less than 1 year	24 (41.4)	32 (55.2)	0.32
	From 1 to under 3 years	12 (20.7)	13 (22.4)	
	From 3 years to less than 5 years	09 (15.5)	06 (10.3)	
	5 years or more	13 (22.4)	07 (12.1)	

Note: (c)Fisher's exact test.

Table 3 presents the comparison of health and disease-related factors between the intervention and control groups. The results indicate that there were no statistically significant differences between the two groups regarding cancer type, disease stage, treatment modality, and duration of illness ($p > 0.05$).

Table 4. Comparison of mean Quality of Life scores in the control groups at baseline and six weeks post-discharge (n = 58)

Variables	Mean ± SD		p[d]
	T0	T1	
Global health status/QoL	43.51 ± 11.36	41.11 ± 14.37	0.17
Physical functioning	57.19 ± 19.36	54.81 ± 27.74	0.44
Role functioning	51.48 ± 19.73	47.04 ± 28.71	0.29
Cognitive functioning	79.26 ± 15.95	76.67 ± 16.44	0.13
Emotional functioning	86.30 ± 15.20	83.70 ± 15.89	0.30

Variables	Mean ± SD		p[d]
	T0	T1	
Social functioning	48.89 ± 18.26	45.93 ± 25.91	0.46
Fatigue symptoms	50.12 ± 16.52	56.05 ± 27.31	0.10
Nausea & vomiting symptoms	6.67 ± 12.51	8.89 ± 12.61	0.18
Pain symptoms	50.74 ± 15.47	56.67 ± 27.84	0.14
Dyspnea symptoms	14.81 ± 21.97	11.85 ± 21.50	0.42
Insomnia symptoms	45.93 ± 22.80	51.11 ± 31.46	0.23
Loss of appetite symptoms	39.26 ± 30.39	44.44 ± 33.33	0.20
Constipation symptoms	17.04 ± 24.23	13.33 ± 20.60	0.06
Diarrhea symptoms	5.19 ± 15,82	3.70 ± 12.76	0.49
Financial difficulties	58.52 ± 21.50	57.04 ± 19.62	0.62

Note: ([d])Paired T-test (within-group comparison); T0: Baseline (pre-intervention); T1: Six weeks post-discharge.

The results in Table 4 indicate that there were no statistically significant differences in mean quality of life scores within the control group between baseline (T0) and six weeks post-discharge (T1) ($p > 0.05$).

Table 5. Comparison of mean quality of life scores in the intervention groups at baseline and six weeks post-discharge (n = 58)

Variables	Mean ± SD		p[d]
	T0	T1	
Global health status/QoL	46.67 ± 10.38	50.83 ± 14.70	0.02
Physical functioning	64.93 ± 19.97	76.13 ± 19.52	0.00
Role functioning	52.33 ± 17.50	64.67 ± 21.20	0.00
Cognitive functioning	82.67 ± 20.19	88.67 ± 17.31	0.01
Emotional functioning	89.00 ± 14.03	93.00 ± 13.30	0.04
Social functioning	53.33 ± 16.50	65.33 ± 17.44	0.00
Fatigue symptoms	42.89 ± 19.05	31.78 ± 22.00	0.002
Nausea & vomiting symptoms	6.67 ± 13.47	02.33 ± 7.54	0.01
Pain symptoms	46.00 ± 13.70	32.67 ± 23.32	0.00
Dyspnea symptoms	10.00 ± 18.13	06.00 ± 16.06	0.16
Insomnia symptoms	38.67 ± 26.39	30.67 ± 24.13	0.02
Loss of appetite symptoms	33.33 ± 27.77	27.33 ± 25.81	0.14

Variables	Mean ± SD		p[d]
	T0	T1	
Constipation symptoms	13.33 ± 21.30	6.67 ± 15.06	0.001
Diarrhea symptoms	1.33 ± 6.60	0.67 ± 4.71	0.32
Financial difficulties	52.00 ± 20.38	48.67 ± 23.53	0.17

Note: ([d])Paired T-test (within-group comparison); T0: Baseline (pre-intervention); T1: Six weeks post-discharge.

The results in Table 5 indicate that there were statistically significant differences in most quality of life domains within the intervention group between baseline (T0) and six weeks post-discharge (T1) ($p < 0.05$), except for dyspnea, appetite loss, and diarrhea ($p > 0.05$).

Table 6. Comparison of Mean Quality of Life scores between the Intervention and Control Groups at six weeks post-discharge

Variables	Mean ± SD		p[a]	Cohen's d
	Intervention group	Control group		
Global health status/QoL	50.83 ± 14.70	41.11 ± 14.37	0.02	0.67
Physical functioning	76.13 ± 19.52	54.81 ± 27.74	0.00	0.89
Role functioning	64.67 ± 21.20	47.04 ± 28.71	0.001	0.70
Cognitive functioning	88.67 ± 17.31	76.67 ± 16.44	0.001	0.71
Emotional functioning	93.00 ± 13.30	83.70 ± 15.89	0.003	0.63
Social functioning	65.33 ± 17.44	45.93 ± 25.91	0.00	0.88
Fatigue symptoms	31.78 ± 22.00	56.05 ± 27.31	0.00	0.98
Nausea & vomiting symptoms	02.33 ± 7.54	8.89 ± 12.61	0.003	0.63
Pain symptoms	32.67 ± 23.32	56.67 ± 27.84	0.00	0.93
Dyspnea symptoms	06.00 ± 16.06	11.85 ± 21.50	0.14	
Insomnia symptoms	30.67 ± 24.13	51.11 ± 31.46	0.00	0.73
Loss of appetite symptoms	27.33 ± 25.81	44.44 ± 33.33	0.01	0.57
Constipation symptoms	6.67 ± 15.06	13.33 ± 20.60	0.08	
Diarrhea symptoms	0.67 ± 4.71	3.70 ± 12.76	0.14	
Financial difficulties	48.67 ± 23.53	57.04 ± 19.62	0.06	

Note: ([a])Independent sample test

The results in Table 6 indicate that at six weeks post-discharge, the mean scores of most quality of life domains differed significantly between the intervention and control groups ($p < 0.05$), except for constipation, diarrhea, and financial difficulties. The effect size of the program on the quality of life domains ranged from moderate to high.

DISCUSSION

Pain self-management intervention enhances quality of life in cancer patients

Quality of life is a crucial criterion reflecting the effectiveness of healthcare interventions. In this study, we assessed QoL at six weeks post-discharge. The results indicate that the mean QoL score in the intervention group showed a statistically significant improvement compared to both the pre-intervention period and the control group, particularly in general health and all functional domains ($p < 0.05$). The intervention's effect sizes on these domains were moderate to high (Cohen's $d > 0.67$). Similar findings were reported by Musavi et al., who observed significant differences between the intervention and control groups at one month and three months post-intervention in functional domains, symptom management, and financial well-being ($p < 0.05$) [9]. Moreover, a study by Koller et al [14] demonstrated that pain-related mobility restrictions decreased following an intervention targeting physical function. Regarding emotional function, Su-Jin et al [15] suggested that individualized pain management education significantly improved emotional well-being. In the domain of social function, Keefe et al. reported that a three-session pain management education intervention delivered by healthcare providers significantly enhanced patients' social well-being [16].

For the symptom domain: By comparing the mean scores between the intervention and control groups at six weeks post-discharge, we identified significant differences in fatigue, nausea/vomiting, pain, sleep disturbances, and loss of appetite ($p < 0.05$), with effect sizes ranging from moderate to large ($0.57 <$ Cohen's $d < 0.98$). These findings align with previous research by Sharif [17], which reported that, at four and eight weeks post-intervention, mean scores for fatigue, pain, sleep disturbances, nausea/vomiting, and loss of appetite significantly decreased in the intervention group compared to the control group. However, in the present study, no statistically significant differences were observed between the intervention and control groups regarding dyspnea, constipation, or diarrhea. In contrast, studies by Koh Su-Jin et al [15] and Alghadir et al [18] demonstrated significant differences in these symptoms pre- and post-intervention and between the two groups. The discrepancies in findings may be attributed to the relatively short follow-up period of six weeks post-discharge in our study, as well as the inclusion of patients with various cancer types rather than a specific cancer subgroup. Although these symptoms may arise due to pain medication side effects or treatment-related complications, future studies should enhance interventions aimed at preventing these symptoms.

In addition to improvements in general health, functional capacity, and symptom management, this study assessed financial difficulties at six weeks post-discharge. While the intervention group demonstrated a reduction in mean financial difficulty scores compared to both baseline and the control group, the difference was not statistically significant ($p > 0.05$). This finding aligns with Sharif's study, which similarly reported no significant changes in financial difficulties at four and eight weeks post-intervention [17]. Conversely, Musavi et al [9] observed a statistically significant reduction in financial burden between the intervention and control groups at one and three months post-intervention ($p < 0.05$).

The greater impact observed in Musavi's study may be attributed to differences in the study population, as their sample comprised patients with metastatic cancer-a population facing greater disease severity, requiring multimodal treatment, and experiencing frequent hospitalizations. It is plausible that effective pain management within their intervention program led to fewer hospital admissions, thereby reducing overall treatment costs and financial strain. These findings highlight the potential economic benefits of structured pain self-management interventions, though further research is needed to explore their long-term financial impact across different cancer populations.

The findings of this study underscore the relevance and high applicability of the Symptom Management Theory (SMT) in clinical pain management for cancer patients in Vietnam. The pain self-management intervention implemented in Vinh Phuc province, which was developed based on the SMT framework, effectively reduced pain and enhanced multiple domains of quality of life. However, as the intervention primarily focused on pain management, it did not yield statistically significant improvements in symptoms such as dyspnea, constipation, and diarrhea. This limitation aligns with previous research on SMT-based symptom management interventions, as the framework has inherent constraints in addressing complex symptom clusters. Despite its strengths, this study has several limitations. Resource constraints, time limitations, and the unstable health conditions of cancer patients restricted long-term follow-up and comprehensive evaluation. Additionally, the study relied solely on quantitative data collection, without incorporating qualitative insights. Moreover, the intervention was exclusively conducted on cancer patients and did not extend to their primary caregivers, whose involvement could further enhance patient outcomes. Future research should address these limitations to refine and optimize the effectiveness of pain self-management interventions.

CONCLUSION

Pain self-management intervention for cancer patients through health education counseling improved their quality of life at six weeks post-discharge, particularly in overall health and most symptoms, except for constipation, dyspnea, diarrhea, and financial burden. In cancer patient care, enhancing pain self-management education is essential to help patients effectively control pain and improve their quality of life. Future studies should continue refining and optimizing the intervention program to achieve the best possible outcomes.

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