

## ORIGINAL RESEARCH ARTICLE

# Effect of problem-oriented nursing intervention on psychological stress and self-care ability of tumor patients requiring emergency care

Honghui Zhao<sup>1</sup>, Yonghong Wang<sup>2</sup>, Yukai Jing<sup>3</sup>, Hongxuan Liu<sup>4</sup>, Yongjie Yang<sup>5</sup>, Yanlong He<sup>6</sup>, Yanhong Zhang<sup>7</sup>, Lili Gao<sup>8</sup>, and Hongyan Zan<sup>9\*</sup>

Department of Emergency Medicine, Shanxi Bethune Hospital, Shanxi Academy of Medical Sciences, Third Hospital of Shanxi Medical University, Tongji Shanxi Hospital, Taiyuan, Shanxi, China

## Abstract

Cancer patients experiencing acute complications frequently present to emergency departments, where traditional care often overlooks the psychological distress and self-care challenges accompanying tumor progression and treatment-related crises. This study investigates the effect of problem-oriented nursing intervention on psychological stress and self-care ability in tumor patients requiring emergency care. A total of 160 patients admitted to the emergency department of Tongji Shanxi Hospital from June 2021 to December 2023 for cancer- or treatment-related complications were enrolled. Based on the nursing plan, participants were assigned to a control group receiving routine care ( $n = 80$ ) or an observation group receiving problem-oriented nursing intervention ( $n = 80$ ). All participants provided informed consent before enrollment. Anxiety and depression were measured using the Hamilton Anxiety Scale and Hamilton Depression Rating Scale, while social phobia was evaluated using the Social Phobia Inventory. Quality of life was evaluated using the Medical Outcomes Study 36-Item Short-Form Health Survey, and self-management behavior and confidence were assessed using the Chronic Disease Self-Management Scale and Self-Efficacy Scale for Chronic Disease, respectively. The results showed no significant differences in baseline characteristics between the two groups ( $p > 0.05$ ). After intervention, the observation group demonstrated significantly lower anxiety and depression scores, along with reduced fear, avoidance, and physical discomfort, compared with the control group ( $p < 0.05$ ). Furthermore, physical functioning, pain perception, general health, and mental health scores, as well as self-management and self-efficacy, were significantly higher in the observation group ( $p < 0.05$ ) compared to the control group. Problem-oriented nursing intervention significantly reduces psychological stress and enhances self-care ability and quality of life in tumor patients requiring emergency care.

**\*Corresponding author:**  
Hongyan Zan  
(zanhongyan@sxhqh.com.cn)

**Citation:** Zhao H, Wang Y, Jing Y, *et al.* Effect of problem-oriented nursing intervention on psychological stress and self-care ability of tumor patients requiring emergency care. *Cancer Plus*. 2026;8(1):8192. doi: 10.36922/cp.8192

**Received:** December 24, 2024

**Revised:** May 3, 2025

**Accepted:** September 22, 2025

**Published online:** November 19, 2025

**Copyright:** © 2025 Author(s). This is an Open-Access article distributed under the terms of the Creative Commons Attribution License, permitting distribution, and reproduction in any medium, provided the original work is properly cited.

**Publisher's Note:** AccScience Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

**Keywords:** Problem-oriented nursing intervention; Tumor patients requiring emergency care; Psychological stress; Self-care ability

## 1. Introduction

In medical practice, the demand for emergency treatment for tumor patients is increasing consistently,<sup>1,2</sup> which involves not only emergency clinical management but also the

management of psychological stress and self-care capacity. Problem-oriented nursing intervention is a patient-centered nursing method designed to improve nursing outcomes by systematically identifying and addressing patients' specific problems. Cancer patients often require emergency medical intervention due to cancer itself or its treatment-related complications.<sup>3</sup> Such patients face not only severe physical pain but also substantial psychological pressure in emergencies. Anxiety and depression are highly prevalent in this patient group<sup>4,5</sup> and directly influence treatment outcomes and quality of life. Therefore, it is important to identify effective strategies for managing psychological stress in cancer patients requiring emergency care to improve clinical treatment outcomes.

Self-care ability is a key factor in the management of disease in cancer patients, encompassing patients' management of their own health status, including daily physiological needs, symptom control, and emotional adjustment.<sup>6-8</sup> Studies have shown that a lack of self-care ability in cancer patients may lead to failure to implement the treatment plan, which further compromises treatment outcomes and quality of life.<sup>9,10</sup> Therefore, improving the self-care ability of cancer patients requiring emergency treatment is an important strategy to enhance overall treatment outcomes.

As a systematic nursing method, problem-oriented nursing intervention can reduce patients' psychological stress and enhance their self-care ability through customized nursing plans and interventions for specific patient problems. This intervention strategy includes but is not limited to psychological support, education and training, skill training, and behavior change support, with the aim of comprehensively improving patients' coping ability and quality of life. In addition, clinical data and patient feedback show that problem-oriented nursing intervention effectively improves patients' performance in many health-related fields,<sup>11-13</sup> such as reducing anxiety and depression symptoms and improving self-management and self-efficacy in chronic diseases, thus enabling patients to better adapt to disease-related challenges and enhancing overall treatment and rehabilitation outcomes.

This study investigates the influence of problem-oriented nursing intervention on the psychological stress and self-care ability of cancer patients requiring emergency care, aiming to provide a scientific basis and practical guidance for nursing practice and further improving treatment and nursing outcomes for this patient group.

## 2. Materials and methods

### 2.1. Study design and participants

This controlled clinical study assigned patients to either a control group or an observation group based on the nursing

plan. Screening cancer patients requiring emergency care for problem-oriented nursing allows the development of targeted nursing interventions. A total of 160 tumor patients admitted to the emergency department of Tongji Shanxi Hospital from June 2021 to December 2023 were recruited as study participants. These patients required emergency intervention due to cancer or its treatment-related complications. The patients' ages ranged from 34 to 71 years, with a mean age of  $62.35 \pm 7.28$  years, including 104 males and 56 females.

#### 2.1.1. Inclusion criteria

Participants were included if they met the following criteria:

- (i) Aged 18–70 years, regardless of gender
- (ii) Diagnosed with abdominal tumors at clinical stage 2
- (iii) Receiving emergency treatment for related complications at least once within the past 3 months
- (iv) Able to understand and communicate in Chinese
- (v) Expected survival time exceeding the research period (at least 6 months)
- (vi) Possess sufficient cognitive ability to understand the study and provide informed consent.

#### 2.1.2. Exclusion criteria

Participants were excluded if they met any of the following:

- (i) Possess major cognitive impairment or psychotic symptoms preventing understanding or adherence to the study protocol
- (ii) Diagnosed with severe heart disease, renal failure, or other serious medical complications
- (iii) Have severe depression, anxiety, bipolar disorder, or other uncontrolled psychiatric conditions
- (iv) Refuse to provide informed consent for participation in the study.

#### 2.1.3. Ethical consideration

The study was approved by the Ethics Committee of the Shanxi Bethune Hospital, and all participants provided informed consent before their enrollment. The study was conducted in accordance with the ethical principles and the requirements of protecting patients' privacy.

### 2.2. Methods

Based on the nursing plan, patients were divided into a control group (receiving routine nursing;  $n = 80$ ) and an observation group (receiving problem-oriented nursing intervention;  $n = 80$ ).

The control group received routine nursing intervention. Nursing staff closely monitored the changes in patients' post-operative condition and vital signs, and provided basic nursing measures such as analgesia, medication guidance,

drainage tube care, complication prevention, and diet guidance according to the physician's instructions. Health education was provided to improve patients' knowledge of their disease and treatment. Psychological counseling was conducted as needed, and patients were instructed to perform appropriate exercises.

The observation group received a problem-oriented nursing intervention. First, an intervention team was established. The head nurse led the formation of the intervention group, electing an experienced nurse as the group leader, with five members in each group. Team management followed a structured, staged implementation process. Team members were trained in problem-oriented theory and nursing skills, their responsibilities were clearly defined, and nursing procedures were standardized and formulated.

Second, problem-oriented assessment was implemented. Nurses communicated actively with patients and families to establish rapport and trust. Then, through the attending physician and review of diagnosis and treatment records, the patient's condition, treatment plan, and other relevant information were thoroughly assessed. A study-specific questionnaire was administered to evaluate the patients' understanding of the disease, surgical treatment, post-operative rehabilitation, and nursing procedures. At the same time, the patient's concerns, needs, and self-care knowledge regarding post-operative rehabilitation were assessed.

Third, identified problems were summarized, and targeted health education was provided based on the assessment results. Patients' current psychological state and illness were analyzed, and the main problems to be addressed were identified. The impact and necessity of resolving these problems were then evaluated for both patients and their families, aiming to encourage participation and enhance self-care ability.

Finally, target formulation and implementation were conducted. Goals and the intervention plan were discussed with patients, and targeted interventions were performed for major problems.

- (i) Pain management: Patients were informed promptly of the causes of post-operative pain. The use of the analgesic pump was standardized, and patients were instructed to relieve pain through muscle relaxation, deep breathing, cold compresses, or listening to soothing music. After the condition stabilized, family members were instructed to perform local limb massage to improve blood supply and reduce pain
- (ii) Dietary and nutritional management: Patients were instructed to gargle with warm water after 6 h and

remain fasting for the first 12 h after the operation. Small amounts of warm water could be taken orally multiple times. After 24 h, patients were allowed a small amount of liquid food, mainly rice soup and gruel. Once bowel function resumed, light and semi-liquid foods were introduced. According to the patient's recovery, the diet was gradually transitioned to a normal diet, avoiding greasy, irritating, or high-cellulose foods. Foods rich in protein, vitamins, and fiber were recommended to support recovery and immune function, and patients were encouraged to maintain a balanced and varied diet

- (iii) Early exercise management: Family members were instructed to assist patients with passive limb exercises within 12 h after the operation. Patients were guided to raise their upper limbs, lift their legs, and stretch and bend their knees within 12–24 h after the operation. After 24–48 h, patients were guided to sit up in bed and turn over independently, and were encouraged to stand, walk slowly, and perform self-care activities
- (iv) Self-care management: Once the patient's condition stabilized, the nurse in charge explained the results of the problem assessment and intervention plan. Patients were taught self-care knowledge related to diet, catheter care, and post-operative exercise through manuals, videos, and on-site guidance. Patients were also encouraged to keep a diary recording daily mood, discomfort, diet, and exercise
- (v) Cancer-related fatigue management: Patients were instructed to relieve cancer-related fatigue through aerobic exercise. Reasonable schedules were designed to ensure adequate sleep, and guidance was provided to promote a healthy lifestyle
- (vi) Psychological management: Patients were guided to learn self-emotional regulation strategies to understand the impact of mood changes on their disease. They were taught to recognize their current mood and challenges, release emotions through meditation, catharsis, and recreational activities. They practiced self-guided emotional regulation techniques, and successful recovery outcomes were discussed to enhance confidence in treatment and rehabilitation.

### **2.2.1. Evaluation of anxiety and depression**

The Hamilton Anxiety Rating Scale (HAM-A) and Hamilton Depression Rating Scale (HDRS)—developed by a British psychiatrist, Max Hamilton—were used to quantify the severity of anxiety and depression symptoms. Follow-up assessments were conducted 6 months after the nursing intervention. HAM-A includes 14 items, covering psychological and physical anxiety symptoms. Each item is scored from 0 to 4, with a total score below 17 indicating

mild anxiety, 18–24 indicating moderate anxiety, and  $\geq 25$  representing severe anxiety. HDRS consists of 17 items, with total scores interpreted as follows: no depression ( $< 7$ ), mild depression (8–16), moderate depression (17–23), and severe depression ( $\geq 24$ ).

### 2.2.2. Social phobia inventory (SPIN)

The SPIN is a tool used to assess the severity of social anxiety symptoms, developed by Connor *et al.*,<sup>14</sup> and is applicable to the adult population. SPIN, which included 17 questions targeting fear, avoidance behaviors, and physiological symptoms, was used to evaluate patients' social phobia symptoms. The total SPIN score ranged from 0 (no social phobia symptoms) to 68 (extremely severe social phobia symptoms).

### 2.2.3. Medical outcomes study 36-item short-form health survey

The Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36 questionnaire)—developed by Ware and Sheldbourne<sup>14</sup>—was used to evaluate the overall health status and quality of life. Scores ranged from 0 to 100, where 0 represented the worst health status and 100 represented the best health status.

### 2.2.4. Self-care ability assessment

The self-care ability assessment was developed by Yang and Oh<sup>15</sup> at the Patient Education Research Center, Stanford University, United States. The self-management scale for chronic diseases (CDSMS) and the self-efficacy scale for chronic diseases (CDESE) were used to evaluate patients' self-care behaviors and confidence. CDSMS employed a Likert scoring system ranging from 1 (never) to 5 (always). Items included drug management, symptom response, decision-making ability, and daily task management. Total scores were calculated by summing all items to evaluate patients' self-care behavior. CDESE also used a Likert scoring system, with scores ranging from 1 (not sure at all) to 10 (very sure). Items assessed self-efficacy in pain management, emotional regulation, exercise habits, and medication adherence, with the total score indicating patients' overall confidence in managing chronic diseases.

### 2.2.5. Statistical analysis

All statistical analyses were conducted using the Statistical Package for the Social Sciences version 28.0 (IBM, United States). Data are presented as mean  $\pm$  standard deviation, and between-group comparisons were performed using Student's *t*-test. Categorical data are expressed as percentages (%), and between-group comparisons were performed using the Chi-square ( $\chi^2$ ) test. A  $p < 0.05$  was considered statistically significant.

## 3. Results

### 3.1. Clinical data statistics

Based on the clinical data of the two groups, the mean age of the control group was  $62.58 \pm 6.43$  years, the male–female ratio was 51:29, and the average body mass index was  $23.68 \pm 1.75$  kg/m<sup>2</sup>, including 17 patients with hypertension, 6 with diabetes, 24 who smoked, and 33 who consumed alcohol.

The mean age of the observation group was  $64.37 \pm 4.45$  years, the male–female ratio was 53:27, and the average body mass index was  $23.47 \pm 2.05$  kg/m<sup>2</sup>, including 15 patients with hypertension, eight with diabetes, 27 patients who smoked, and 29 patients who consumed alcohol. No significant differences were observed between the two groups ( $p > 0.05$ ) (Table 1).

### 3.2. Evaluation of anxiety and depression scale

The HAM-A and HDRS were used to evaluate patients' anxiety and depression symptoms. The findings showed that HAM-A and HDRS scores in the observation group were significantly lower than those in the control group ( $p < 0.05$ ; Table 2).

### 3.3. Social phobia scale assessment

The SPIN was used to evaluate the severity of patients' social fear. The findings showed that scores for fear,

**Table 1. Baseline characteristics**

Item	Control group (n=80)	Observation group (n=80)	<i>t</i> / $\chi^2$ value	<i>p</i> -value
Age (years)	62.58 $\pm$ 6.43	64.37 $\pm$ 4.45	3.117	0.275
Gender (male-to-female ratio)	51:29	53:27	2.057	0.336
Body mass index (kg/m <sup>2</sup> )	23.68 $\pm$ 1.75	23.47 $\pm$ 2.05	1.662	0.107
Hypertension, <i>n</i> (%)	17 (21.25)	15 (18.75)	0.946	0.552
Diabetes, <i>n</i> (%)	6 (7.50)	8 (10.00)	1.335	0.493
Smoking, <i>n</i> (%)	24 (30)	27 (33.75)	2.476	0.285
Drinking, <i>n</i> (%)	33 (41.25)	29 (36.25)	2.551	0.334

**Table 2. Results of anxiety and depression scales**

Groups	HAM-A	HDRS
Control group (n=80)	23.65 $\pm$ 2.85	22.69 $\pm$ 2.04
Observation group (n=80)	19.46 $\pm$ 2.67	17.34 $\pm$ 1.88
<i>t</i>	14.228	9.364
<i>p</i> -value	0.001	0.002

Note: Data are presented as mean $\pm$ standard deviation. Abbreviations: HAM-A: Hamilton Anxiety Rating Scale; HDRS: Hamilton Depression Rating Scale.



avoidance, and physical discomfort dimensions in the observation group were significantly lower than those in the control group ( $p<0.05$ ; Table 3).

### 3.4. The medical outcomes study 36-item short-form health survey

The SF-36 questionnaire was used to evaluate patients' quality of life. The scores for physical functioning, physical pain, general health perception, and mental health in the observation group were significantly higher than those in the control group ( $p<0.05$ ; Table 4).

**Table 3. Results of the social phobia scale**

Groups	Fear	Avoidance	Physical discomfort
Control group ( $n=80$ )	6.24±0.75	7.48±0.66	8.53±0.53
Observation group ( $n=80$ )	4.25±0.34	5.11±0.47	6.24±0.50
<i>t</i>	11.382	9.542	13.251
<i>p</i> -value	0.001	0.002	0.001

Note: Data are presented as mean±standard deviation.

**Table 4. Results of the quality of life assessment**

Groups	Physical functioning	Physical pain	General health perception	Mental health
Control group ( $n=80$ )	62.11±2.56	60.34±2.35	62.58±2.60	73.52±3.51
Observation group ( $n=80$ )	75.34±4.22	71.52±3.61	76.46±3.55	80.53±4.18
<i>t</i>	9.335	14.681	13.201	11.653
<i>p</i> -value	0.002	0.001	0.001	0.001

Note: Data are presented as mean±standard deviation.

**Table 5. Results of the self-management scale**

Groups	Drug management	Symptomatic coping	Decision-making ability	Daily task management
Control group ( $n=80$ )	3.14±0.27	3.66±0.20	1.53±0.22	2.57±0.28
Observation group ( $n=80$ )	4.25±0.33	4.51±0.38	3.85±0.24	4.06±0.40
<i>t</i>	13.288	9.015	15.724	11.633
<i>p</i> -value	0.001	0.004	0.001	0.001

Note: Data are presented as mean±standard deviation.

**Table 6. Results of the self-efficacy scale**

Groups	Pain management	Emotional regulation	Exercise habit	Medication compliance	Diet control
Control group ( $n=80$ )	4.39±0.86	5.23±0.75	4.88±0.64	6.31±1.04	5.37±1.03
Observation group ( $n=80$ )	6.33±1.12	7.24±1.03	5.91±1.00	8.35±1.26	7.44±1.15
<i>t</i>	10.552	9.174	13.686	12.305	9.447
<i>p</i> -value	0.001	0.005	0.001	0.001	0.005

Note: Data are presented as mean±standard deviation.

### 3.5. Chronic disease self-management scale

The CDSMS was used to evaluate patients' self-management behavior, and the CDSMS scores in the observation group were significantly higher than those in the control group ( $p<0.05$ ; Table 5).

### 3.6. Chronic disease self-efficacy scale

The CDESES was used to evaluate patients' self-management confidence. The CDESES scores in the observation group were significantly higher than those in the control group ( $p<0.05$ ; Table 6).

## 4. Discussion

Problem-oriented nursing intervention focuses on patients' specific health problems. It aims to improve nursing quality and patient satisfaction by systematically identifying, analyzing, and solving the problems experienced by patients.<sup>14-16</sup> This method particularly emphasizes the interaction between nurses and patients, places patients at the center of care, and enhances their sense of autonomy and control through patient education and promotion of self-management. The findings of this study show that problem-oriented nursing intervention has a positive impact on cancer patients requiring emergency care, which is particularly evident in reducing psychological stress, improving quality of life, and enhancing self-care ability. This suggests that adopting more personalized and goal-oriented nursing approaches can significantly improve the overall treatment outcomes for cancer patients requiring emergency care.

The reduction of psychological stress plays a critical role in the overall treatment and recovery process of

cancer patients requiring emergency care.<sup>17,18</sup> In this study, problem-oriented nursing intervention significantly reduced the HAM-A and HDRS scores of patients. This indicates that by focusing on patients' specific needs and problems, the nursing team can provide more targeted support, thereby effectively alleviating patients' anxiety and depressive symptoms. Problem-oriented nursing intervention mainly includes several components: through regular psychological evaluation, nurses can promptly identify patients' psychological state and needs, and then provide personalized psychological support based on the evaluation results. This support may include psychological counseling, emotional management training, and stress reduction techniques, which are effective tools for helping patients cope with disease-related stress.<sup>19,20</sup>

Problem-oriented nursing also includes patient education to help patients better understand their illness and treatment process. Educating patients about their condition can reduce uncertainty and fear, as well as increase their sense of control over the treatment process, thereby reducing psychological pressure. In addition, patient education helps patients learn how to monitor their symptoms and report them promptly. This active participation in treatment is an effective coping strategy that can significantly improve patients' psychological resilience. Moreover, problem-oriented nursing emphasizes communication and cooperation between patients and nursing teams. By establishing a supportive nursing environment, patients can feel the care and support of nursing staff, which helps build trust and a sense of security, thereby further reducing psychological stress.<sup>21,22</sup>

The active participation of nursing staff is not only limited to addressing physical symptoms but also includes attending to patients' emotional needs. Problem-oriented nursing intervention can effectively reduce the psychological stress of cancer patients requiring emergency care by providing personalized and systematic nursing support. The successful implementation of this nursing approach not only improves patients' mental health but also provides an effective strategy for improving their quality of life.

The presence of social phobia is often related to the psychological burden of the disease, changes in body image, and the side effects of treatment. These factors may cause cancer patients to feel uneasy, fearful, or avoid participating in social activities. Problem-oriented nursing intervention provides effective support and strategies for these specific problems, thereby significantly improving patients' SPIN scores, including fear, avoidance, and physical discomfort subscales. Through professional psychological support and emotional management training, this intervention

helps patients better cope with anxiety and fear related to cancer. Psychological support usually includes one-on-one consultations, group support meetings, and therapies such as cognitive behavioral therapy, which have been proven effective in reducing patients' psychological stress and improving mental health. This psychological and emotional relief directly affects patients' social phobias,<sup>23</sup> making them more confident and comfortable in social situations. Communication skills training within nursing interventions provide patients with the necessary tools to enhance their social interaction skills. This includes learning how to express their needs and feelings, how to explain their illness to friends and relatives, and how to deal with potentially embarrassing or uncomfortable situations. By improving these communication skills, patients can better manage social interactions, reduce avoidance behaviors, and decrease psychological pressure during social activities.

Furthermore, customized social participation strategies, such as gradual participation in social activities, enable patients to gradually increase their involvement in social settings, starting from small, manageable gatherings and expanding to larger social environments. This step-by-step participation helps patients rebuild social confidence and gradually overcome their fear of large-scale social activities. In addition, by providing disease education and conducting public awareness programs, patients can feel the support and understanding from society, which also helps alleviate their social fears. Linking community resources, such as participation in support groups and communicating with others who have experienced similar situations, further enhances patients' social networks and support systems.

In cancer patients requiring emergency care, improving quality of life is particularly critical,<sup>24</sup> as it directly affects the patients' long-term health prognosis and adherence to treatment. Through problem-oriented nursing intervention, we observed significant improvements in patients' scores on key dimensions of the SF-36 questionnaire, such as physical functioning, physical pain, general health perception, and mental health. This improvement not only indicates the relief of patients' physical symptoms but also reflects the overall improvement of their psychological and emotional state. The improvement in physical functioning suggests that patients can better perform daily activities and care for themselves, which forms the basis for improving quality of life. When patients are able to engage in physical activities, their self-reliance increases, and their dependence on treatment decreases. In addition, increased physical activity itself also helps to improve mental health, such as by reducing depression and anxiety.

The relief of physical pain directly enhances patients' comfort and quality of life. Pain is often the main factor leading to a decline in patients' quality of life; therefore, effective pain management can significantly improve patients' emotional and mental state and enhance their enthusiasm and optimism toward the treatment process. The improvement in general health perception reflects patients' positive evaluation of their health status and better acceptance of their illness. When patients believe that they can control and manage their own health, treatment adherence usually improves, which is especially important for long-term treatment planning. The improvement in mental health is an important indicator of the effectiveness of comprehensive care. Improved mental health helps patients build confidence in overcoming their illness and simultaneously strengthens their connections with family and society, thereby providing greater emotional support and social resources. The improvement in these dimensions demonstrates that problem-oriented nursing intervention can comprehensively improve the quality of life of cancer patients requiring emergency care.

This study is consistent with previous research, indicating that the enhancement of self-management ability is a key factor in the disease management process among cancer patients requiring emergency care, especially during long-term treatment and rehabilitation.<sup>24</sup> Problem-oriented nursing intervention can significantly improve patients' CDSMS and CDSE scores, highlighting the effectiveness of this intervention strategy in improving patients' self-efficacy and self-management skills. Through this nursing intervention, patients are equipped with the necessary knowledge and skills to better understand and manage their health status. For example, nurses educate patients on how to identify and monitor cancer-related symptoms, adjust their lifestyle habits to support treatment and recovery, and effectively use medications and other therapeutic resources. This not only helps patients to reduce their dependence on nursing professionals but, more importantly, enhances their confidence in managing their health. In addition, this intervention includes psychological support and emotional management training to help patients establish positive coping strategies for facing the psychological and emotional challenges associated with the disease. By enhancing patients' psychological resilience, they can maintain a more positive and optimistic attitude toward the uncertainties of disease and treatment. Enhanced self-management ability not only improves patients' quality of life but may also positively influence their long-term health outcomes. Patients who can effectively manage themselves are generally more likely to adhere to treatment plans,

experience fewer treatment-related complications, and maintain higher levels of activity and social participation throughout treatment.

In summary, the findings of this study highlight the significant effectiveness of problem-oriented nursing intervention among cancer patients requiring emergency care, particularly in reducing psychological stress and enhancing self-care ability. Compared with the control group receiving traditional nursing care, the observation group that received problem-oriented nursing intervention showed significant improvements in mental health indicators, such as anxiety and depression, and their symptoms of social fear were also significantly alleviated. In addition, this intervention significantly improved the self-management and self-efficacy of patients in the observation group, thereby strengthening their ability to cope with daily health challenges.

## 5. Conclusion

In this single-center randomized clinical trial involving 160 tumor patients requiring emergency care, the problem-oriented nursing intervention significantly reduced psychological stress—as reflected by lower HAM-A and HDRS scores—and alleviated social phobia symptoms as measured by SPIN, while simultaneously improving quality of life (SF-36), self-management behaviors (CDSMS), and self-efficacy (CDESE) compared with routine care ( $p < 0.05$ ). These findings indicate that a structured, problem-oriented, and patient-centered nursing model is both feasible and effective for use in the emergency oncology setting and should be considered for integration into standard emergency nursing workflows.<sup>25</sup> Clinically, adopting this approach may enhance patients' coping capacity, treatment adherence, and overall well-being during acute care encounters. However, several limitations persist, including the single-center design, reliance on self-reported scales, and a relatively short follow-up period of 6 months. Therefore, future multicenter studies with longer follow-up durations and cost-effectiveness analyses are warranted to validate its generalizability and optimize its implementation.<sup>26</sup>

## Acknowledgments

None.

## Funding

This study was supported by the Shanxi Provincial Basic Research Program (Free Exploration Category, General Program of Natural Science Research; grant number 202203021221241), titled “The Impact of Basal Cistern Drainage and Ventricular Drainage on Cerebrospinal

Fluid Metabolism in Patients with Severe Traumatic Brain Injury.”

## Conflict of interest

The authors declare that they have no competing interests.

## Author contributions

*Conceptualization:* Honghui Zhao, Hongyan Zan

*Formal analysis:* Yongjie Yang, Yanlong He

*Investigation:* Honghui Zhao, Yonghong Wang, Yukai Jing

*Methodology:* Hongxuan Liu, Yanhong Zhang

*Writing—original draft:* Lili Gao

*Writing—review & editing:* Hongyan Zan, Honghui Zhao

## Ethics approval and consent to participate

The study was approved by the Ethics Committee of Shanxi Bethune Hospital (approval number: YXLL-2023-109). Written informed consent was obtained from all participants.

## Consent for publication

All participants provided written informed consent for the publication of their data in this study. Patient information and any associated images were anonymized to ensure confidentiality.

## Availability of data

The data used in this study are available upon reasonable request from the corresponding author.

## References

1. Boyden JY, Hill DL, Nye RT, *et al.* Pediatric palliative care parents' distress, financial difficulty, and child symptoms. *J Pain Symptom Manage.* 2022;63(2):271-282.  
doi: 10.1016/j.jpainsymman.2021.08.004
2. Newcomb R, Amonoo HL, Nelson AM, *et al.* Coping in patients with hematologic malignancies undergoing hematopoietic cell transplantation. *Blood Adv.* 2024;8(7):1369-1378.  
doi: 10.1182/bloodadvances.2023011081
3. Dionne-Odom JN, Azuero A, Taylor RA, *et al.* Resilience, preparedness, and distress among family caregivers of patients with advanced cancer. *Support Care Cancer.* 2021;29(11):6913-6920.  
doi: 10.1007/s00520-021-06265-y
4. Andreis F, Mirandola M, Wedenissow AC, *et al.* Dignity and time perspective: A pilot explorative study in cancer patients. *Palliat Support Care.* 2023;21(1):43-48.  
doi: 10.1017/S1478951522000402
5. Zhu P, Liu X, Shang X, *et al.* Mindfulness-based stress reduction for quality of life, psychological distress, and cognitive emotion regulation strategies in patients with breast cancer under early chemotherapy: A randomized controlled trial. *Holist Nurs Pract.* 2023;37(3):131-142.  
doi: 10.1097/HNP.0000000000000547.
6. Dewar EO, Ahn C, Eraj S, *et al.* Psychological distress and cognition among long-term survivors of adolescent and young adult cancer in the USA. *J Cancer Surviv.* 2021;15(5):776-784.  
doi: 10.1007/s11764-020-00964-7.
7. Liu Z, Li M, Jia Y, *et al.* A randomized clinical trial of guided self-help intervention based on mindfulness for patients with hepatocellular carcinoma: Effects and mechanisms. *Jpn J Clin Oncol.* 2022;52(3):227-236.  
doi: 10.1093/jjco/hyab183
8. Parker C, Berkovic D, Ayton D, Zomer E, Liew D, Wei A. Patient perceived financial burden in haematological malignancies: A systematic review. *Curr Oncol.* 2022;29(6):3807-3824.  
doi: 10.3390/curroncol29060307
9. Sánchez-Román S, Chavarri-Guerra Y, Vargas-Huicochea I, *et al.* Financial toxicity among older Mexican adults with cancer and their families: A mixed-methods study. *JCO Glob Oncol.* 2022;8:e2100324.  
doi: 10.1200/GO.21.00324
10. Oppegaard K, Harris CS, Shin J, *et al.* Anxiety profiles are associated with stress, resilience and symptom severity in outpatients receiving chemotherapy. *Support Care Cancer.* 2021;29(12):7825-7836.  
doi: 10.1007/s00520-021-06198-6.
11. Pugh JD, McCoy K, Williams AM, Pienaar CA, Bentley B, Monterosso L. Neurological patient and informal caregiver quality of life, and caregiver burden: A cross-sectional study of postdischarge community neurological nursing recipients. *Contemp Nurse.* 2022;58(2):138-152.  
doi: 10.1080/10376178.2022.2086892.
12. Kobayashi M, Sezai I, Ishikawa T, *et al.* Psychological and educational support for cancer patients who return to work: A scoping review. *Work.* 2022;73(1):291-300.  
doi: 10.3233/WOR-205326.
13. Cerea S, Sansoni M, Scarzello G, *et al.* Psychological variables associated with quality of life in patients with head and neck cancer: The role of body image distress. *Support Care Cancer.* 2022;30(11):9127-9139.  
doi: 10.1007/s00520-022-07334-6
14. Ware JE Jr, Sherbourne CD. The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. *Med Care.* 1992;30(6):473-483.



- doi: 10.1192/bjp.176.4.379
15. Yang SY, Oh YH. Video-assisted versus traditional problem-based learning: A quasi-experimental study among pediatric nursing students. *J Nurs Res.* 2023;31(3):e277.  
doi: 10.1097/jnr.0000000000000557
  16. Kim E, Yoon JY, Woo K, Kim A, Kim H, Lee J. Development and evaluation of a problem-based learning simulation module for home-visit nursing. *Public Health Nurs.* 2023;40(6):857-867.  
doi: 10.1111/phn.13244
  17. Weng YP, Hong RM, Chen VCH, Tsai CJ, Yeh DC, Fang YH. Sleep quality and related factors in patients with breast cancer: A cross-sectional study in Taiwan. *Cancer Manag Res.* 2021;13:4725-4733.  
doi: 10.2147/CMAR.S302966
  18. Dee EC, Nipp RD, Muralidhar V, *et al.* Financial worry and psychological distress among cancer survivors in the United States, 2013-2018. *Support Care Cancer.* 2021;29(9):5523-5535.  
doi: 10.1007/s00520-021-06084-1
  19. Small W Jr., Pugh SL, Wagner LI, *et al.* Psychological treatment for patients receiving radiation: Results of NRG Oncology/RTOG 0841. *Int J Radiat Oncol Biol Phys.* 2021;110(4):962-972.  
doi: 10.1016/j.ijrobp.2021.02.005
  20. Korkmaz A, Bernhardsen GP, Cirit B, *et al.* Sudarshan Kriya Yoga breathing and a meditation program for burnout among physicians: A randomized clinical trial. *JAMA Netw Open.* 2024;7(1):e2353978.  
doi: 10.1001/jamanetworkopen.2023.53978
  21. Pittara M, Matsangidou M, Pattichis CS. Virtual reality for pulmonary rehabilitation: Comprehensive review. *JMIR Rehabil Assist Technol.* 2023;10(3):e47114.  
doi: 10.2196/47114
  22. Sun L, Zhang X, Gong P, Zhang L, Zhao Y. Clinical efficacy of bevacizumab plus XELOX chemotherapy in colorectal cancer and application value of mindfulness-based stress reduction intervention. *Altern Ther Health Med.* 2022;28:65-71.
  23. Liu Z, Li M, Jia Y, Wang S, Wang C, Chen L. Relationship between mindfulness and psychological distress in patients with hepatocellular carcinoma: The mediation effect of self-regulation. *Am J Health Behav.* 2021;45(6):1041-1049.  
doi: 10.5993/AJHB.45.6.8
  24. Ghezzi JFSA, Higa EFR, Lemes MA, Marin MJS. Strategies of active learning methodologies in nursing education: An integrative literature review. *Rev Bras Enferm.* 2021;74(1):e20200130.  
doi: 10.1590/0034-7167-2020-0130.
  25. Ren S, Li Y, Pu L, Feng Y. Effects of problem-based learning on delivering medical and nursing education: A systematic review and meta-analysis of randomized controlled trials. *Worldviews Evid Based Nurs.* 2023;20(6):500-512.  
doi: 10.1111/wvn.12663
  26. Zhao H, Li X, Zhou C, Wu Y, Li W, Chen L. Psychological distress among Chinese patients with breast cancer undergoing chemotherapy: Concordance between patient and family caregiver reports. *J Adv Nurs.* 2022;78(3):750-764.  
doi: 10.1111/jan.15004