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ABOUT COVER

Editorial board member of *World Journal of Clinical Cases*, Dr. Li is a Professor at the Nanjing University Medical School in Nanjing, China. Having received his Bachelor's degree from Xuzhou Medical College in 1997, Dr. Li undertook his postgraduate training first at Nanjing Medical University, receiving his Master's degree in 2004, and then at Fudan University, receiving his PhD in 2007. He advanced to Chief Physician in the Department of Anesthesiology at The Affiliated Hospital of Nanjing University Medical School in 2017 and has held the position since. His ongoing research interests involve ultrasound (transthoracic echo and transesophageal echo) in clinical anesthesia and ultrasound-guided limb and trunk nerve block in postoperative pain management. (L-Editor: Filipodia)

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WJCC mainly publishes articles reporting research results and findings obtained in the field of clinical medicine and covering a wide range of topics, including case control studies, retrospective cohort studies, retrospective studies, clinical trials studies, observational studies, prospective studies, randomized controlled trials, randomized clinical trials, systematic reviews, meta-analysis, and case reports.

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Retrospective Study

Research on the effect of health care integration on patients' negative emotions and satisfaction with lung cancer nursing activities

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statement: This study was approved by the Ethics Committee of The Fifth Affiliated Hospital of Sun Yat-sen University.

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Abstract

BACKGROUND

Lung cancer is a clinical disease with multiple malignant tumors. Currently, it is difficult for patients to benefit from routine clinical nursing due to the lack of a pertinent and systematic approach.

AIM

To investigate the effect of integrated nursing care on the negative emotions and satisfaction of lung cancer patients.

METHODS

From January 2018 to December 2019, 92 patients with lung cancer were selected and divided into the study group and the control group; there were 46 patients in each group. The control group received routine nursing, and the study group received integrated medical care in addition to the care received by the control group. Negative emotions before and after the intervention, the self-management ability score after the intervention, family care burden after the intervention and nursing satisfaction after the intervention were measured in the two groups.

RESULTS

After the intervention, the self-rating anxiety scale and self-rating depression scale scores in the study group were lower than those in the control group ($P < 0.05$); the scores for health knowledge, self-concept, self-responsibility and self-care

additional data are available.

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skills in the study group were higher than those in the control group ($P < 0.05$); the scores for individual burden and responsibility burden in the study group were lower than those before the intervention ($P < 0.05$); and the nursing satisfaction in the study group (93.48%) was higher than that in the control group (78.26%, $P < 0.05$).

CONCLUSION

An integrated nursing care approach for lung cancer patients can effectively relieve the patient's negative feelings, improve their self-management ability, help to reduce the burden of family care and improve patient satisfaction with nursing activities.

Key Words: Integrated nursing care; Lung cancer; Negative emotion; Nursing satisfaction

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Core Tip: In recent years, with improvements in living standards and the worsening of environmental pollution, the incidence of lung cancer has continuously increased. Currently, it is difficult for lung cancer patients to benefit from routine clinical nursing due to the lack of a pertinent and systematic approach. Integrated nursing care, which is based on the existing concept of clinical nursing and strengthens the significance of clinical nursing activities, is also an essential model of clinical intervention. The integrated nursing care group is composed of therapists, doctors and nurses who carry out a series of nursing activities in an attempt to improve the quality of nursing care. In this study, we evaluated the application of an integrated nursing care model through changes in negative emotion and other indices.

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INTRODUCTION

Lung cancer is a clinical disease with multiple malignant tumors. In recent years, with improvements in living standards and the worsening of environmental pollution^[1], the incidence of lung cancer has continuously increased^[2,3]. Surgery and chemotherapy are essential measures for the clinical treatment of lung cancer^[4]. However, the disease itself can lead to severe anxiety and mood swings, an enormous physical and mental burden, and surgery and chemotherapy can cause trauma, that may aggravate the negative feeling of patients^[5,6], which is not conducive to the treatment of disease^[7,8]. Therefore, positive nursing interventions during the treatment of lung cancer patients are most effective^[9,10]. Currently, it is difficult for patients to benefit from routine clinical nursing due to the lack of a pertinent and systematic approach. Integrated nursing care, which is based on the existing concept of clinical nursing and strengthens the significance of clinical nursing activities, is also an essential model of clinical intervention. The integrated nursing care group is composed of therapists, doctors and nurses who carry out a series of nursing activities in an attempt to improve the quality of nursing care. Based on this, 92 patients with lung cancer treated at our hospital were selected to evaluate the application of an integrated nursing care model through changes in negative emotion and other indices.

MATERIALS AND METHODS

General information

We selected 92 patients with lung cancer treated at our hospital from January 2018 to December 2019 and divided them into the study group and the control group; there

were 46 patients in each group. The sex, age, disease stage, pathological type, education level and other clinical data were comparable between the two groups ($P > 0.05$, [Table 1](#)), and this study was approved by the ethics committee of our hospital.

Selection criteria

Inclusion criteria: (1) Compliance with the Guidelines for Clinical Diagnosis and Treatment of Lung Cancer of the Chinese Medical Association (2018 Edition) criteria for the diagnosis of middle lung cancer; (2) Stage I-III disease; (3) Karnofsky score more than 60 points and an estimated survival time more than 6 mo; (4) Diagnosis was confirmed by bronchoscopy, MRI, *etc.*; and (5) The study was explained to the patient, and an informed consent form was signed.

Exclusion criteria: (1) Other benign and malignant tumors; (2) Central nervous system diseases; (3) Speech communication disorders, cognitive impairment or neurological lesions; (4) Cerebral infarction and myocardial infarction; or (5) Presence of distant metastasis.

Methodology

The control group received routine care, including maintaining a clean and tidy ward environment with fresh and humid air, providing patients with a high-quality rest environment by reducing indoor light and noise stimulation, and guiding patients to consume a healthy diet, obtain outdoor light exposure, and digest food easily. On the basis of the control group, the study group adopted integrated nursing care, which involved selecting experienced nursing staff, chief physicians and so on to construct the intervention group, conducting systematic training for all members of the group, conscientiously increasing the team's knowledge of integrated nursing care and lung cancer-related nursing, and formulating the corresponding nursing measures after completion of training. The integrated nursing care intervention components included: (1) Rounds. The team conducted rounds with all lung cancer patients within 24 h after admission to assess the specific situation of the patients, including personality characteristics, education level, disease and stage; formulate nursing plans; and discuss the feasibility and rationality of nursing plans with the group. To ensure the quality of nursing care, doctors and nursing staff conducted joint rounds 3 times a week. Questions were asked about the patient's treatment and constructive opinions of the treatment plan; (2) Psychological guidance. Lung cancer itself can lead to different degrees of depression, anxiety and other negative emotions, and invasive surgery and side effects caused by chemotherapy can further increase the physical and mental burden of patients. Therefore, psychological interventions are extremely important and should be carried out in the context of basic knowledge on lung cancer, treatment knowledge and relevant matters requiring attention for each patient to ensure that patients fully and correctly understand lung cancer; to alleviate patients' fear of disease and anxiety; and to inform the patients of the importance of maintaining a positive and optimistic attitude during treatment. For example, a good state of mind has a positive influence on strengthening the body's immune system, ensuring the effect of treatment, and prolonging the survival period; (3) Relaxation therapy. Playing soothing and soft music, creating a relaxed environment, and then guiding the patient to close their eyes to reflect on past fun times is a way of regulating the state of mind of the patient. The provider can guide the patient to slow and deepen their breathing, slightly bend their wrists, make a fist, hold their breath, then slowly breathe out, and relax both hands; the respiratory rate is maintained at 10 to 15 breaths/min, 2 times/d; (4) Sleep guidance. Providers guide patients to watch videos, listen to the radio, read newspapers, participate in aerobic exercise, reduce the number and duration of naps during the day, and go to bed early at night and get up early in the morning to develop good sleep habits and ensure sleep quality; and (5) Providers ensure that the respiratory tract is clear, analyze the causes of any dyspnea that patients experience in combination with the patient's condition and give different intervention measures according to the different reasons; if the tumor has spread to the pleura, a large amount of pleural effusion can be formed, resulting in an insufficient gas exchange area and dyspnea.

Observation indicators

The negative emotion (depression, anxiety) scores before and after the intervention were evaluated according to the self-rating anxiety scale (SAS) and self-rating depression scale (SDS) scores, respectively. Depression was categorized as follows: Mild depression: SDS score 53-62; moderate depression: 63-72; and severe depression: ≥ 73 . Anxiety was categorized as follows: Mild anxiety: SAS score 50-59; moderate

Table 1 Comparison of the general characteristics of the 2 groups, n (%)

Information	Study group (n = 46)	Control group (n = 46)	t/ χ^2 /U value	P value
Age (yr)	39-66 (52.51 ± 6.04)	40-69 (53.02 ± 5.96)	0.408	0.685
Sex			0.177	0.674
Male	25 (54.35)	27 (58.70)		
Female	21(45.65)	19(41.30)		
Stage of disease			0.436	0.663
Stage I	7 (15.22)	9 (19.57)		
Stage II	29 (63.04)	28 (60.87)		
Stage III	10 (21.74)	9 (19.57)		
Education level			0.194	0.908
Primary school	11 (23.91)	10 (21.74)		
Secondary school	28 (60.87)	30 (65.22)		
College and above	7 (15.22)	6 (13.04)		
Type of pathology			0.492	0.782
Squamous carcinoma	21 (45.65)	19 (41.30)		
Adenocarcinoma	22 (47.83)	25 (54.35)		
Adenosquamous carcinoma	3 (6.52)	2 (4.35)		

anxiety: 60-69; and severe anxiety: ≥ 69 . The self-management ability scores of the two groups were evaluated according to the self-care ability measurement table (ESCA), which includes health knowledge, self-concept, self-responsibility, and self-care skills, and has a score ranging from 0 to 172 points; the higher the score, the stronger the self-management ability. The burden of family care before and after the intervention was evaluated in the two groups by the Zarit Caregiver Burden scale (ZBI) for individual burden and responsibility burden; scores ranging from 0 to 10 indicated no burden, from 11 to 20 indicated mild burden, from 21 to 40 indicated moderate burden, from 41 to 60 indicated severe burden and from 61 to 88 indicated extreme burden. Nursing satisfaction was measured in the two groups using the Newcastle care satisfaction scale (NSNS), which included five dimensions: Very satisfactory (5), Satisfactory (4), General satisfaction (3), Unsatisfactory (2), and Very unsatisfactory (1). Total satisfaction = (very satisfactory + satisfaction + general satisfaction)/number of cases per group $\times 100\%$.

Statistical analysis

The data were analyzed by SPSS 22.0. The measurement data were expressed as mean \pm SD and compared with the *t* test; count data were expressed as *n* (%) and compared with the χ^2 test. *P* < 0.05 indicated that the difference was statistically significant.

RESULTS

SAS and SDS scores

There were no significant differences between the SAS and SDS scores in the two groups before the intervention (*P* > 0.05), and after the intervention, the SAS and SDS scores in the study group were lower than those in the control group (*P* < 0.05, Table 2).

ESCA score

There was no significant difference in health knowledge, self-concept, self-responsibility or self-care skills scores between the two groups before the intervention (*P* > 0.05), and the scores for health knowledge, self-concept, self-responsibility and self-care skills after the intervention were higher in the study group than in the control group (*P* < 0.05, Table 3).

Table 2 Comparison of self-rating anxiety scale and self-rating depression scale scores between the two groups (mean ± SD, scores)

Group	Number of cases	SAS	SDS
Before the intervention			
Study group	46	59.71 ± 5.04	60.56 ± 6.29
Control group	46	60.69 ± 5.63	62.08 ± 6.40
<i>t</i> value		0.880	1.149
<i>P</i> value		0.381	0.254
After the intervention			
Study group	46	45.45 ± 4.70	46.69 ± 5.23
Control group	46	51.55 ± 5.01	53.04 ± 5.71
<i>t</i> value		6.023	5.562
<i>P</i> value		< 0.001	< 0.001

SAS: Self-rating anxiety scale; SDS: Self-rating depression scale.

Table 3 Comparison of self-care ability measurement table scores between the two groups (mean ± SD, scores)

Group	Number of cases	Health knowledge	Self-concept	Self-responsibility	Self-care skills
Before the intervention					
Study group	46	30.11 ± 5.19	19.63 ± 3.08	18.23 ± 4.06	21.79 ± 4.56
Control group	46	29.56 ± 5.02	20.04 ± 2.83	17.88 ± 3.78	22.01 ± 5.04
<i>t</i> value		0.517	0.665	0.428	0.220
<i>P</i> value		0.607	0.508	0.670	0.827
After the intervention					
Study group	46	41.38 ± 4.56	26.02 ± 3.18	28.03 ± 3.12	34.56 ± 3.14
Control group	46	33.41 ± 6.00	21.69 ± 3.06	22.56 ± 2.56	26.77 ± 3.48
<i>t</i> value		7.173	6.655	9.193	11.272
<i>P</i> value		< 0.001	< 0.001	< 0.001	< 0.001

ZBI score

There were no significant differences in the scores for individual burden or responsibility burden between the two groups before the intervention ($P > 0.05$); after the intervention, the individual burden and responsibility burden scores were lower than those before the intervention in both groups; however, the scores in the study group were lower than those in the control group ($P < 0.05$; Table 4).

Nursing satisfaction

Nursing satisfaction was higher in the study group (93.48%) than in the control group (78.26%) ($P < 0.05$, Table 5).

DISCUSSION

Lung cancer has a high incidence and mortality^[11,12], and the current clinical treatment for patients with lung cancer is surgery^[13,14]; even after surgery, patients are prone to recurrence^[15]; therefore, more patients need to be treated with adjuvant chemotherapy to reduce the risk of disease recurrence and ensure the effectiveness of treatment^[16]. However, due to the fear of disease and surgery and the side effects of chemotherapy, patients are prone to self-abdication, and therefore, they receive insufficient treatment^[17], which affects their overall outcome^[18]. Consequently, it is of considerable significance to carry out effective nursing care to ensure the best therapeutic effect in

Table 4 Comparison of Zarit Caregiver Burden scale scores between the two groups (mean ± SD, scores)

Group	Number of cases	Personal burden	Responsibility burden
Before the intervention			
Study group	46	32.38 ± 3.15	19.56 ± 5.11
Control group	46	31.15 ± 4.11	20.33 ± 4.46
After the intervention			
Study group	46	17.67 ± 3.32	9.53 ± 2.51
Control group	46	21.04 ± 3.17	11.87 ± 3.06

Table 5 Comparison of nursing satisfaction between the two groups, n (%)

Group	Number of cases	Very satisfied	Satisfied	General satisfaction	Dissatisfied	Very dissatisfied	Satisfaction
Study group	46	18 (39.13)	23 (50.00)	2 (4.35)	3 (6.52)	0 (0.00)	43 (93.48)
Control group	46	13 (28.26)	19 (41.30)	4 (8.70)	8 (17.39)	2 (4.35)	36 (78.26)
χ^2 value							4.390
P value							0.036

patients with lung cancer and to relieve negative emotions.

It is difficult for patients to obtain benefit from nursing care as the division of labor is not clear, and the enthusiasm of nursing staff is insufficient. In recent years, with the continuous increase in patients' requirements for nursing quality, clinical nursing care is no longer just a nursing profession movement; this has become a breakthrough point to strengthen internal management, improve the patient experience, improve hospital service, reform the nursing service model and promote nursing care progress to realize nursing care that is closer to the needs of the clinic, society and patients. The integrated nursing model is the earliest emerging nursing service model in foreign countries, and it is gradually being widely used in the clinic^[19,20]. This research showed that the essence of integrated nursing care is the process of coordinating and specifying the roles of nursing staff and doctors, for which it is critical to further clarify their specific responsibilities and strengthen communication and process reengineering to enhance teamwork. Integrated nursing care was first used in specific specialist management, such as cardiology and orthopedics. At the same time, due to the variety of cases admitted in different departments, the key points and difficulties in the treatment of different diseases are different, so focusing on the key links in the treatment and nursing process to promote the health care team as the core of the intervention is the key to ensuring the quality of clinical treatment and nursing care. The results of a recent study by Wang *et al*^[7] showed that the pain experienced by lung cancer patients after radical resection was significantly reduced, and their hospital stay was significantly reduced. The study confirmed that in addition to negative emotions being alleviated, serum tumor markers, such as cancer antigen 125 and carcinoembryonic antigen, were also significantly decreased.

In this study, the negative emotion score and the self-management ability-related dimension score in the study group were better than those in the control group, and nursing satisfaction in the study group was higher than that in the control group, which indicated that the integrated nursing of medical care had higher application value in patients with lung cancer; the integrated nursing approach was able to relieve the negative emotion of the patients, enhance their self-management ability, and deepen patient recognition of clinical nursing activities. The main reasons for this analysis were as follows: (1) Although routine nursing can play a specific role, it is difficult to achieve good results due to the lack of a persistent and systematic approach, and the integrated nursing approach to medical care can guide patients to relax their whole body and heart by recalling interesting things in past life, taking deep breaths and so on, to relieve negative emotions such as depression and anxiety. With this integrated model, patients are also encouraged to cooperate with exercise suggestions to improve their sleep quality and to maintain a good physical and mental state; and (2) In the integrated nursing model, first, an intervention group was set up for training and study, and a targeted nursing plan was formulated, which not only

ensured that the nursing measures were targeted and timely but also ensured that the nursing staff clearly defined their own responsibilities. At the same time, the implementation of integrated medical care increased communication between doctors and nursing staff, fully mobilized all positive factors, helped to stabilize the mood of patients, and enhanced patient confidence to overcome the disease. In addition, integrated nursing care breaks down the relationship between nurses and patients and reconstructs the three-way relationship between patient, nursing and medical treatment. The two sides established the same medical goal through cooperative association, agreed on the nursing plan, made joint decisions, shared the responsibility and implemented the plan during the intervention period. The results of the study showed that the personal burden and responsibility burden score in the study group were lower than those in the control group, which indicated that the integrated nursing care model also helped to reduce the family care burden, which may be because the nursing model could effectively relieve the negative feelings of the patients and promote their active cooperation with the treatment and nursing activities, so the care burden was reduced.

CONCLUSION

In summary, the integrated nursing care intervention for lung cancer patients can effectively alleviate their negative emotions, improve their self-management ability, and help to reduce the burden of family care; patients who received integrated nursing care were more satisfied with the nursing activities.

ARTICLE HIGHLIGHTS

Research background

Lung cancer is a clinical disease with multiple malignant tumors. Surgery and chemotherapy are important in the clinical treatment of lung cancer.

Research motivation

Integrated nursing care, which is based on the existing concept of clinical nursing and strengthens the significance of clinical nursing activities, is also an important model of clinical intervention.

Research objectives

Evaluate the application of the integrated nursing care model through changes in negative emotion and other indices.

Research methods

A total of 92 patients with lung cancer were selected and divided into the study group and the control group; there were 46 patients in each group. The control group received routine nursing, and the study group received integrated medical care in addition to the care received by the control group. Negative emotions before and after the intervention, the self-management ability score after the intervention, family care burden after the intervention and nursing satisfaction after the intervention were measured in the two groups.

Research results

After the intervention, the self-rating anxiety scale and self-rating depression scale scores in the study group were lower than those in the control group; the scores for health knowledge, self-concept, self-responsibility and self-care skills in the study group were higher than those in the control group; the scores for individual burden and responsibility burden in the study group were lower than those before the intervention; and nursing satisfaction in the study group was higher than that in the control group.

Research conclusions

An integrated nursing care approach for lung cancer patients can effectively relieve the patient's negative feelings, improve their self-management ability, and help to reduce the burden of family care and improve patient satisfaction with nursing

activities.

Research perspectives

Nursing work is inseparable from clinical diagnosis and treatment.

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