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Review Article

Humanized nursing improves the quality of life and increases the family satisfaction of patients with advanced lung cancer

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Abstract: This study aimed to investigate the effects of humanized nursing on the quality of life (QOL) and the family satisfaction of patients with advanced lung cancer (ALC). Eighty-nine patients with ALC admitted to Hubei Cancer Hospital from March 2017 to December 2018 were enrolled, in which 45 cases (treated with conventional nursing) were in the control group, while the other 44 cases (treated with humanized nursing in addition to conventional nursing) were in the humanized group. They were compared in terms of their Self-Rating Anxiety Scale (SAS) scores, Self-Rating Depression Scale (SDS) scores, Cancer-Related Fatigue (CRF) scores, Pittsburgh Sleep Quality Index (PSQI) scores, degree of pain, incidence of complications, hospital stays, QOL, and family satisfaction. Before the nursing, there were no significant differences in in the SAS, SDS, CRF, and PSQI scores in the control and humanized groups ($P>0.05$). After the nursing, the scores in the two groups were reduced significantly, and the scores were significantly lower in the humanized group than they were in the control group ($P<0.05$). The effective rate of pain relief and the incidence of complications were significantly lower in the humanized group than they were in the control group ($P<0.05$). The hospital stays were significantly shorter in the humanized group than they were in the control group ($P<0.05$). The QOL index and family satisfaction scores were higher in the humanized group than they were in the control group ($P<0.05$). Humanized nursing can improve the QOL and the family satisfaction of patients with ALC, so it is a suitable clinical nursing model.

Keywords: Humanized nursing, ALC, QOL, family satisfaction

Introduction

Lung cancer is a common malignant tumor in the respiratory system. Its incidence increases annually due to the massive invasion of chemical substances into the natural environment and the environment's deterioration. It also has a high mortality rate that increases year by year. Therefore, lung cancer is a disease that seriously endangers human life and health [1, 2]. Moreover, the disease has an extremely high rate of malignancy. Most patients when diagnosed are already in the advanced stages, which are not the best time for surgery. Although there is no perfect radical treatment for the diagnosis and treatment of lung cancer in clinical practice, chemotherapy as a therapeutic method helps patients with advanced lung cancer (ALC) control the illness, relieve their clinical symptoms, and meet their needs as much as possible by prolonging their survival time [3-5]. Chemotherapy hinders the proliferation of tumor cells, but it also damages normal cells during the treatment and causes many adverse reactions (such as coughing, hemoptysis, asthma, nausea, and diarrhea), resulting in the patients' emotional instability and poor quality of life (QOL) [6, 7]. With the continuous metastasis and spread of the cancer cells, the pain is increasingly severe, which aggravates patients' psychological and physiological burdens [8]. Therefore, effective nursing for patients with ALC may improve their psychological status, guide them psychologically to actively participate in the treatment, and improve their QOL during the treatment.

At present, conventional nursing is commonly performed for patients with ALC, but this method is unsatisfactory in its process and out-

come, and it has not become a systematic and specifically defined scheme. Starting with nursing activities and comfort, humanized nursing relieves patients' high-pressure and anxiety to a more pleasant state, and reduces their unstable emotions by integrating the physiological, psychological, and social aspects of their lives into the clinical nursing process, so that the patients can actively participate in and cooperate with the treatment and receive treatment in comfortable states of the body, mind, and spirit [9, 10]. Therefore, the influence of humanized management on the QOL and the family satisfaction of patients with ALC during nursing was explored in this study. The report is as follows.

Materials and methods

Clinical data

Eighty-nine patients with ALC admitted to Hubei Cancer Hospital from March 2017 to December 2018 were enrolled, in which 45 cases (treated with conventional nursing) were in the control group, while the other 44 cases (treated with humanized nursing in addition to the conventional nursing) were in the humanized group. The patients consisted of 56 males and 33 females with an average age of 56.37±7.32 (years). There were 16 cases with small cell lung cancer (SCLC) and 73 cases with non-small cell lung cancer (NSCLC) according to pathological types. The inclusion criteria were as follows: (1) patients who met the diagnostic criteria for ALC as classified by France-America-Britain and World Health Organization [11, 12]; (2) patients diagnosed with ALC using pathology and cytology; (3) patients with a clear consciousness and independent communication and expression. The exclusion criteria were as follows: (1) patients with incomplete clinical data due to the interruption or abandonment of treatment during the study; (2) patients with an expected survival time less than 6 weeks; (3) patients suffering from cardiovascular and cerebrovascular diseases. This study was approved by the Hospital Ethics Committee. The selected patients signed the informed consent form after being informed of the project details.

Methods

The patients in the control group were conventionally nursed. Their conditions and vital signs were closely monitored to make health education and dietary suggestions. The patients in the humanized group were treated with humanized nursing intervention: (1) Monitoring vital signs: Their vital signs were evaluated, and recent data changes in their hepatic, renal, and other organ functions were monitored. Their psychological states, exercise, and alimentary control were assessed. (2) Standardizing etiquette service: The nursing staff regularly carried out relevant training and assessment, including operating skills and the theoretical knowledge of nursing for lung cancer, to ensure their work was professional and normative. Meanwhile, the nursing staff showed a good mental outlook and behaviors, and used honorific language when communicating with the patients, so as to construct a harmonious nurse-patient relationship and thereby smoothly implement the nursing measures. (3) Hospital atmosphere: The nursing staff consulted and asked about the patients' preferences and dispositions in advance as far as possible, so as to arrange the ward beds and ensure the wards were bright and warm. The humidity and temperature were set up based on the standards for the human body's somatosensory comfort, so as to provide a humanized fine adjustment range, make the patients feel the most comfortable, and enable them to adapt to the hospitalization environment faster. (4) Cognitive behavior intervention: The nursing staff shared lung cancer-related knowledge with the patients and implemented humanized knowledge nursing intervention during their admission. Regular talks were arranged to strengthen the sharing of the health education, deepen the patients' cognition and understanding of the disease, and to make psychological preparations for the various adverse reactions and matters needing attention during the later phase of the treatment. During the treatment, the nursing staff communicated with the patients smoothly and naturally, paid attention to the changes in their psychological conditions, and dealt with their psychological problems promptly, so that they could always maintain good psychological treatment and nursing intervention. (5) Health guidance: According to the patients' activities, body weight, and diets, the nursing staff calculated their daily calorie requirement and formulated a humanized three-meal plan for regularly and quantitatively ingesting an appropriate amount of fruit and vegetables and for eating less starchy and fatty

Table 1. Comparison of the clinical data

Groups	Control group (n=45)	Humanized group (n=44)	t/X^2	P
Gender (Cases)			0.192	0.661
Male	29 (64.44)	27 (61.36)		
Female	16 (35.56)	17 (38.64)		
Average age (Years)	56.53±7.46	54.13±8.13	1.452	0.150
Pathological types (Cases)			0.542	0.462
SCLC	7 (15.56)	9 (20.45)		
NSCLC	38 (84.44)	35 (79.55)		
Educational level (Cases)			2.357	0.502
Primary school	2 (4.44)	1 (2.27)		
Junior high school	4 (8.89)	6 (13.64)		
Secondary or high school	17 (37.78)	14 (31.82)		
College and above	22 (48.89)	23 (52.27)		
History of smoking (Cases)			0.357	0.551
Yes	29 (64.44)	30 (68.18)		
No	16 (35.56)	14 (31.82)		
History of drinking (Cases)			0.389	0.533
Yes	31 (68.89)	32 (72.73)		
No	14 (31.11)	12 (27.27)		
Genetic history (Cases)			0.142	0.707
Yes	7 (15.56)	8 (18.18)		
No	38 (84.44)	36 (81.82)		
Lymph node metastasis (Cases)			0.088	0.767
Yes	16 (35.56)	15 (34.09)		
No	29 (64.44)	29 (65.91)		
Renal metastasis (Cases)			0.130	0.719
Yes	8 (17.78)	9 (20.45)		
No	37 (82.22)	35 (79.55)		

foods, so that the patients could achieve balanced nutrition. Sleep guidance were carried out for the patients suffering from insomnia. A soothing and gentle environment created by music was helpful for relaxation, and foot soaking before sleep was conducive to relieving insomnia. The nursing staff formulated reasonable and high-quality exercise programs for the patients, and they reasonably controlled the amount of exercise according to their conditions, age, cardiopulmonary function, and other comprehensive conditions. The amount of exercise was preferable when the patients felt tired. (6) Nursing intervention for complications: During the treatment and nursing, the nursing staff strengthened the observation and corresponding prevention and gave timely treatment based on the actual situations of the various symptoms. Any abnormal situation was promptly reported to the doctors.

Outcome measures

The Self-Rating Anxiety Scale (SAS) and the Self-Rating Depression Scale (SDS) were used to assess the patients' psychological states. Each scale had 20 questions, with 1 to 4 points for each question. A high score indicates severe anxiety and depression [13, 14].

The Cancer-Related Fatigue (CRF) scale was used to assess the patients' cancer-related fatigue, mainly their physical, cognitive, behavioral, and emotional fatigue. A high score indicates significant fatigue [15].

The Pittsburgh Sleep Quality Index (PSQI) was used to record the patients' sleep quality. It includes 7 components with an average score of 0-3 points each, with the total score ranging from 0 to 21 points. A high score indicates poor sleep quality [16].

The Visual Analogue Scale (VAS) with a score of 0-10 points was used to assess the patients' degree of pain. The degree of pain was divided into painless (0 points), slight pain (1-3 points), moderate pain (4-6 points), and severe pain (>7 points) [17].

The Quality of Life Questionnaire (QLQ-C30) was used to assess the patients' QOL, including their social, cognitive, role, and physical functions. The score was positively correlated with the QOL [18].

The satisfaction scale developed by Hubei Cancer Hospital was used to assess the family satisfaction. The scale included 10 aspects such as nursing attitudes, operative techniques, and nursing timeliness, with 10 points for each aspect. The score was positively correlated with the level of family satisfaction.

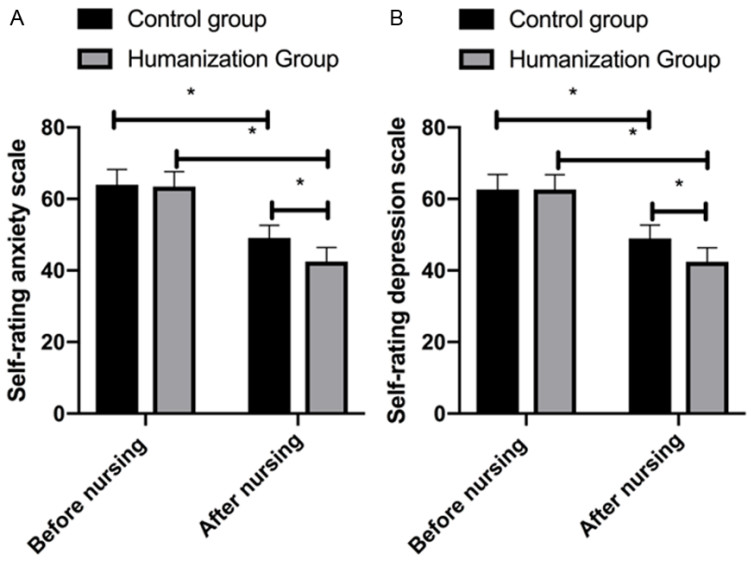

Figure 1. Comparison of the SAS and SDS scores under the different nursing modes. A: After the nursing, the SAS scores in the two groups were significantly reduced, and the score in the humanized group was significantly lower than it was in the control group. B: After the nursing, the SDS scores in the two groups were significantly reduced, and the score in the humanized group was significantly lower than it was in the control group. Note: * indicates P<0.05 when there is a comparison between the groups.

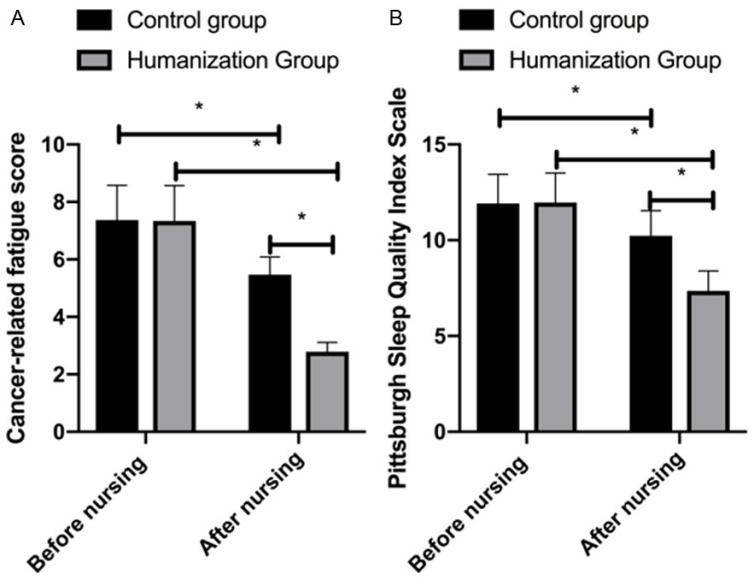

Figure 2. Comparison of the CRF and PSQI scores under the two different nursing modes. A: After the nursing, the CRF score in the two groups decreased significantly, and the score in the humanized group was lower than it was in the control group. B: After the nursing, the PSQI scores in the two groups decreased significantly, and the scores in the humanized group were lower than they were in the control group. Note: * indicates P<0.05 when there is a comparison between groups.

Statistical processing

All the data were analyzed using SPSS12.0 statistical analysis software. χ^2 tests were used to compare the count data. The measurement data were expressed as the means ± standard deviation, and the comparisons between groups were analyzed using t tests. P<0.05 indicated that a difference was statistically significant.

Result

Comparison of clinical data

There were no statistically significant differences between the control and humanized groups with respect to their clinical data such as gender, age, pathological types, or educational level (P>0.05). See **Table 1** for details.

Comparison of the psychological state under the different nursing modes

Before the nursing, there were no significant differences in the SAS or SDS scores in the control or humanized groups (P>0.05). After the nursing, the scores in the two groups were significantly reduced. The SAS score in the humanized group (42.52±3.94) was significantly lower than the SAS score in the control group (49.13±3.52), and the SDS score in the humanized group (42.46±3.91) was significantly lower than the SDS score in the control group (48.99±3.74) (P<0.05). See **Figure 1** for details.

Comparison of the CRF and PSQI scores under the different nursing modes

Before the nursing, there were no significant differences in the CRF or PSQI scores in the control and humanized groups (P>0.05). After the nursing, the scores in the two groups decreased significantly. The CRF scores in the humanized group (2.79±0.32) were lower than they were in the control group (5.47±0.62), and PSQI scores in the humanized group (7.36±

Table 2. Comparison of pain after the nursing

Groups	Control group (n=45)	Humanized group (n=44)	X^2	P
Painless	9 (20.00)	22 (50.00)	-	-
Slight pain	16 (35.56)	12 (27.27)	-	-
Moderate pain	14 (31.11)	8 (18.18)	-	-
Severe pain	6 (13.33)	2 (4.55)	-	-
Effective rate of pain relief	25 (55.56)	34 (77.27)	9.898	0.002

Table 3. Comparison of the incidence of complications under the different nursing modes

Groups	Control group (n=45)	Humanized group (n=44)	X^2	P
Pulmonary infection	3 (6.67)	2 (4.55)	-	-
Sputum retention	3 (6.67)	1 (2.27)	-	-
Skin lesion	2 (4.44)	0	-	-
Cardiovascular diseases	2 (4.44)	1 (2.27)	-	-
Pulmonary atelectasis	3 (6.67)	1 (2.27)	-	-
Incidence of complications	13 (28.89)	5 (11.36)	10.131	0.002

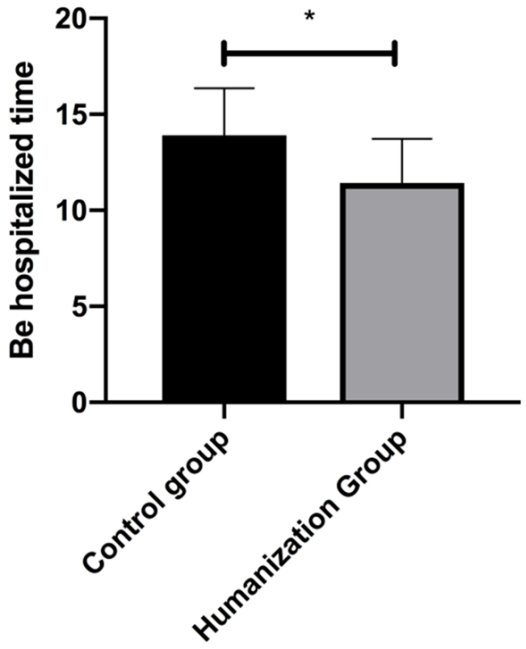

Figure 3. Comparison of hospital stays under the different nursing modes. The hospital stays in the humanized group were significantly shorter than those in the control group. Note: * indicates P<0.05 when there is a comparison between groups.

1.03) were lower than they were in the control group (10.23±1.31) (P<0.05). See **Figure 2** for details.

Comparison of the degree of pain after the nursing

The effective rate of pain relief in the humanized group was 77.27% (34/44), significantly higher than the 55.56% (25/45) in the control group (P<0.05). See **Table 2** for details.

Comparison of the incidences of complications under the different nursing modes

The incidences of complications in the humanized group was 11.36% (5/44), significantly lower than the 28.89% (13/45) in the control group (P<0.05). See **Table 3** for details.

Comparison of the hospital stays under the different nursing modes

The hospital stays in the humanized group were (11.42±2.31) days, significantly shorter than the (13.91±2.44) days in the control group (P<0.05). See **Figure 3** for details.

Comparison of the QOL under the different nursing modes

The QOL index scores in the humanized group were higher than they were in the control group (P<0.05). See **Table 4** for details.

Comparison of the family satisfaction under the different nursing modes

After the nursing, the family satisfaction in the humanized group was 95.45% (42/44), significantly higher than the 75.56% (34/45) in the control group (P<0.05). See **Table 5** for details.

Conclusion

ALC is divided into local ALC and ALC according to the tumor location. The former refers to the invasion or lymphatic metastasis of the tissues and organs surrounding the lung cancer, but the distant organs are not yet metastasized. The latter has possible single and multiple metastases, and the onset at the different

Table 4. Comparison of the QOL under the different nursing modes

Groups	Control group (n=45)	Humanized group (n=44)	t	P
Social function	45.63±3.79	57.35±3.89	14.400	<0.001
Cognitive function	46.25±5.13	58.94±4.95	11.870	<0.001
Role function	48.35±5.25	59.13±5.32	9.621	<0.001
Physical function	49.24±5.72	58.95±4.84	8.636	<0.001

Table 5. Comparison of the family satisfaction under the different nursing modes

Groups	Control group (n=45)	Humanized group (n=44)	X^2	P
Very satisfied	18 (40.00)	27 (61.36)	-	-
Generally satisfied	16 (35.56)	15 (34.09)	-	-
Dissatisfied	11 (24.44)	2 (4.55)	-	-
Family satisfaction	34 (75.56)	42 (95.45)	14.561	<0.001

pathological stages is closely related to the patients' survival and prognosis [19, 20]. According to the relevant investigations, smoking is the main cause of lung cancer, so an effective way to prevent the disease is to stop smoking or reduce smoking. Additionally, appropriate exercise enhancement also reduces the risk of the disease [21, 22]. Patients with ALC have low QOL, and they suffer from mental illness as well as physical pain. However, effective therapeutic measures for the disease in clinical practice are limited. Besides conventional drugs and surgical treatment to stabilize the disease, clinical nursing can also be strengthened to help stabilize the patients' moods and improve their QOL. Humanized nursing is a more effective and commonly used method for ALC [23]. Therefore, patients with ALC were selected for conventional and humanized nursing respectively in this study, in which the improvementin pain, psychology, and other aspects during the nursing was recorded, so as to explore the factors needing attention in improving the patients' QOL and the family satisfaction.

It is crucial to strengthen the faith and psychological quality of the patients with ALC for those suffering from long-term pain. Therefore, the psychological states of the patients with ALC were studied after humanized nursing and conventional nursing. The regression and improvement of anxiety and depression in the humanized group were more significant than they were in the control group. Some studies have shown that humanized nursing upholds the people-oriented concept, helps patients understand health knowledge by explaining matters needing attention that relate to the disease condition, and alleviates their anxiety and depression, so as to help them relax physically and mentally and feel safe and trusting. Stable emotions are more conducive to patients' independent treatment [24]. This indicates that the psychological intervention and adjustment of humanized nursing for patients with ALC are significantly higher than those who undergo clinical conventional nursing. Cancer-related fatigue usually occurs in patients with lung cancer during chemotherapy because the chronic depletion of body energy results in a continuous decline of the patients' self-evaluation and body functions, and then greatly affects their long-term living conditions [25]. In this study, the treatment of cancer-related fatigue and sleep in the humanized group was better than it was in the control group. However, there is little research on the relationship between humanized nursing and the sleep quality of patients with lung cancer. The better sleep may occur because humanized nursing helps the patients recover their psychological state and changes their fatigue and insomnia by improving their attitudes towards the disease. According to the statistics of pain and the related complications in patients with ALC, the effective rate of pain relief and the incidence of complications in the humanized group were significantly lower than they were in the control group. Patients with lung cancer usually felt exhausted physically and mentally when they felt severe pain. The nursing staff in the humanized group could help patients ease and relieve their pain through scientific and accurate record evaluation. Moreover, the effect of humanized nursing on complication control is also remarkable [26, 27]. These findings are consistent with those of this study. In our study, the hospital stays were significantly shortened after the nursing, and the QOL and the family satisfaction were significantly improved after discharge in the humanized group. Published studies indicate that the QOL is the objective state and subjective feeling of patients

themselves at the present stage in terms of their physiological, psychological, and social functions. When patients suffer from pathological pain and psychological burdens, it is difficult for them to focus their attention. Humanized nursing can improve their satisfaction and comfort in these aspects, thereby greatly improving their QOL [28]. This reveals that humanized nursing for patients with ALC is beneficial in improving their QOL, as well as their and their families' attitudes toward the disease.

In summary, humanized nursing, as a component of the nursing staff's operations, plays an important role in improving the QOL of patients with ALC and is conducive to enhancing their family satisfaction. However, there are still some deficiencies in the survey of family satisfaction in this study. In clinical practice, a good nurse-patient relationship plays a vital role in guiding the patients to cooperate in their treatment. This study only recorded the family satisfaction scores, but it did not explore in which aspects humanized nursing affected the evaluation of patients and their families on the nursing service. If this aspect is discussed in subsequent studies, the treatment process may be smoother.

Disclosure of conflict of interest

None.

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