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Original Article

The effects of death education on the mental health and quality of life in patients with advanced hepatocellular carcinoma

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Abstract: Objective: To investigate the effects of death education on the mental health and quality of life in patients with advanced hepatocellular carcinoma (HCC). Methods: A total of 80 patients diagnosed with advanced HCC were enrolled in the study. All patients were randomly divided into 2 groups (group A and B), with each group containing 40 patients. Group A received routine nursing care for HCC during the hospital stay, while group B was given death education in addition to routine nursing care. The clinical data of both groups were collected and compared. The WHO's pain intensity scale was used to measure and compare the pain intensity between the two groups at 1 month after intervention. Each patient's negative emotions were assessed and compared using the self-rating depression scale (SDS) and the self-rating anxiety scale (SAS). Quality of life was compared using the QOL-C30 scale. Nursing satisfaction was also compared between the groups. Results: Both the SDS and SAS scores decreased after the nursing intervention in the two groups (both $P<0.001$); however, the decrease was more pronounced in group B, and the SDS and SAS scores in group B were significantly lower than those in group A (both $P<0.001$). The number of patients with grade III and grade IV cancer pain was also lower in group B than it was in group A; however, the difference was not significant ($P>0.05$). Patient quality of life, including physical health, mental health, material life, and social function, was significantly better in group B than in group A ($P<0.05$). Nursing satisfaction was also higher in group B than in group A ($P<0.05$). Conclusion: Death education can effectively control negative emotions and increase the nursing satisfaction in advanced HCC patients. Compared with routine nursing care alone, death education can improve a patient's quality of life, which is highly recommended in palliative care clinical practice.

Keywords: Advanced hepatocellular carcinoma, death education, mental health, quality of life

Introduction

Hepatocellular carcinoma (HCC) is the most common type of primary liver cancer in adults and has a high incidence [1, 2]. There are more than 700,000 new cases of HCC every year in the world; 60% of the new cases are found in the later stages, and the mortality rate ranks second among all malignant tumors [3]; HCC is mainly caused by liver cirrhosis and is associated with many complications such as tumor rupture, gastrointestinal bleeding, and hepatic encephalopathy, which are a major threat and the leading cause of death in advanced HCC patients [4, 5]. Due to unhealthy lifestyles and poor eating habits, the number of HCC patients has been increasing year by year [6]. Chemotherapy is currently the main treatment for patients with advanced HCC. However, the side effects of chemotherapy and the cancer-induced pain greatly compromise its therapeutic effects. Furthermore, chemotherapy is administered over a long period of time, which causes a high recurrence rate and a poor prognosis [7]. In order to improve patient quality of life and treatment efficacy, a more appropriate and effective nursing intervention is needed to care for terminal HCC patients [8].

With the development of the social economy, the concept of nursing care is also rapidly changing. Improvements in the medical envi-

Table 1. Comparison of the baseline conditions

Group	Group A (n=40)	Group B (n=40)	t/χ^2	P
Age (year)	68.2±7.2	67.9±7.4	0.184	0.855
Gender			0.220	0.639
Male	25 (62.50)	27 (67.50)		
Female	15 (37.50)	13 (32.50)		
Duration of the disease (year)	2.2±0.6	2.1±0.5	0.810	0.421
BMI (kg/m^2)	19.12±2.40	19.23±1.51	0.245	0.807
Smoking history			1.013	0.314
Yes	40 (100.00)	39 (97.50)		
No	0 (0.00)	1 (2.50)		
Alcohol use history			0.238	0.626
Yes	29 (72.50)	27 (67.50)		
No	11 (27.50)	13 (32.50)		
Complications				
Tumor rupture	12 (30.00)	20 (50.00)	3.333	0.068
Variceal bleeding	16 (40.00)	10 (25.00)	2.051	0.152
Hepatic encephalopathy	12 (30.00)	10 (25.00)	0.251	0.617

ronment and therapeutic efficacy have led to ever-increasing patient demands for mental health and quality of life [9]. Previous research has shown that the combination of different nursing methods is conducive to the improvement of patient quality of life [10]. Traditional nursing care lacks more standardized psychological counseling and targeted death education for patients with advanced cancer, which leads to great psychological problems in the later stages of cancer and seriously affects a patient's quality of life [11, 12]. Because patients with advanced liver cancer suffer tremendous pain and serious economic burdens during the treatment, the patient is often in a negative emotional state. However, death education can help patients better understand the value of life, calmly cope with life and death, and keep them in a positive emotional state. As a result, patients can have less pain and better quality of life in the final stage of life, which is of great clinical significance [13-15]. This study compared the effects of routine nursing care with death education in advanced HCC patients, in an effort to evaluate the improvement in mental health and quality of life induced by death education in terminal cancer patients.

Materials and methods

Patients

A total of 80 patients diagnosed with advanced HCC and treated in The Second Affiliated Hospital of Anhui University of Traditional Chinese Medicine and Shuguang Hospital Affiliated of Shanghai University of Traditional Chinese Medicine from January 2017 to December 2018 were enrolled in the study. All the patients provided an informed consent, and this study was approved by the ethics committees of The Second Affiliated Hospital of Anhui University of Traditional Chinese Medicine and Shuguang Hospital Affiliated of Shanghai University of Traditional Chinese Medicine. The patients were randomly divided into 2 groups (groups A and B), with each group containing 40 patients. Group A received routine nursing care for HCC during the hospital stay, while group B was given death education in addition to the routine nursing care. Group A had 25 males and 15 females, with an average age of 68.2±7.2 years and a disease duration of 2.2±0.6 years; group B had 27 males and 13 females with an average age of 67.9±7.4 years and a disease duration of 2.2±0.6 years.

Inclusion criteria: Patients who were diagnosed with advanced HCC in accordance with the *Guidelines for the Diagnosis and Treatment of Primary Liver Cancer* (2017 Edition) formulated by the China Anti-Cancer Association [16]; patients who were more than 18 years old. Exclusion criteria: Patients who had clinical manifestations of serious complications such as tumor ruptures, variceal bleeding, hepatic encephalopathy or hepatorenal syndrome; patients who had congenital diseases or other tumors; patients who had cognitive or mental disorders.

Methods

Group A received routine nursing care for advanced HCC as follows: the ward was ventilated and cleaned thoroughly to maintain a clean and neat living environment. Based on individual preference, each patient's meals were prepared for a light and healthy diet,

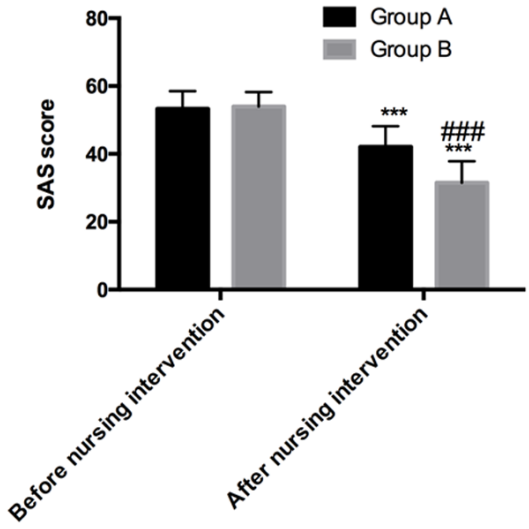

Figure 1. Comparison of the SAS scores. ***P<0.001, compared with before the nursing intervention; ###P<0.001, compared with group A; SAS, self-rating anxiety scale.

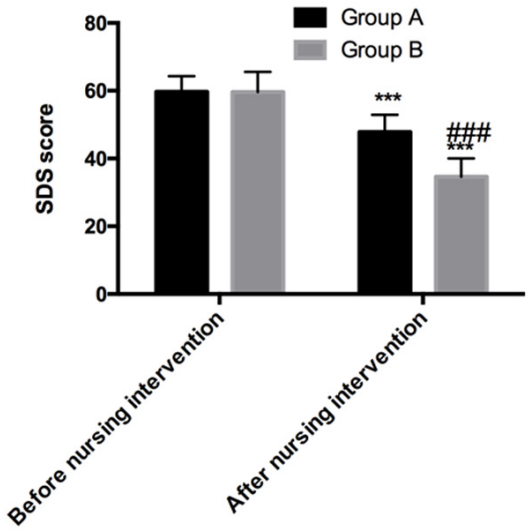

Figure 2. Comparison of the SDS scores. ***P<0.001, compared with before the nursing intervention; ###P<0.001, compared with group A; SDS, self-rating depression scale.

avoiding greasy and spicy ingredients. Medication was given strictly following the doctor's directions. When a certain complication occurred, the patient's attending physician was noticed promptly to ensure timely management. Regarding the patient's daily life, the patient was accompanied by the medical staff or family members as much as possible to provide psychological comfort and the alleviation of negative emotions.

The medical staff who implemented the death education had undergone standardized training or obtained a psychologist qualification certificate, and the death education nursing group was established under the guidance of a senior psychologist. Group B received death education in addition to routine nursing care. The death education was implemented as follows: the medical staff provided the patient and the patient's family members with targeted educational materials based on the patient's actual psychological state and physical condition. Individual conversation was given as needed to actively guide the patient through the death education. When the patient had pain, an appropriate amount of analgesic was given according to the degree of pain. When patients had concerns about their treatment and prognosis, the medical staff explained to the patient about the occurrence, development, and therapeutic methods of HCC in a timely manner, and compassionately taught the patient to understand the meaning of life, calmly cope with life and death, and cherish each day at the last stage of life. Each patient was also encouraged to complete some unfinished desires to fulfill his or her life goals.

Observation indices

The clinical data of both groups were collected and compared. Their pain intensity was compared 1 month after the nursing intervention. The pain intensity was rated at according to WHO's five-point pain intensity scale, with degree 0 being no pain and degree IV being the worst pain [17]. Each patient's negative emotions were assessed and compared using the self-rating depression scale (SDS) and the self-rating anxiety scale (SAS); the SDS and SAS scores were proportional to the degree of depression and anxiety [18]. Quality of life was compared using the QOL-C30 scale which has 4 dimensions: physical health, mental health, material life, and social function; the higher the score, the higher the quality of life [19]. Nursing satisfaction was also compared between the groups: nursing satisfaction rate = (very satisfied + satisfied + neutral)/total * 100%.

Statistical analysis

All data were analyzed using the SPSS 19.0 statistical package. Quantitative values were expressed as the mean ± standard deviation ($\bar{x}$ ± sd). The differences between the groups

Table 2. Comparison of the pain intensity (n/%)

Group	Group A (n=40)	Group B (n=40)	U	P
Grade 0	3 (7.50)	1 (2.50)	669.000	0.190
Grade I	9 (22.50)	11 (27.50)		
Grade II	10 (25.00)	18 (45.00)		
Grade III	10 (25.00)	9 (22.50)		
Grade IV	8 (20.00)	1 (2.50)		

Table 3. Comparison of the QOL-C30 scale scores

Group	Group A (n=40)	Group B (n=40)	t	P
Physical health	42.19±7.55	49.72±6.06	4.919	<0.001
Mental health	67.15±7.16	79.42±6.29	8.143	<0.001
Material life	65.31±5.18	78.23±5.42	10.900	<0.001
Social function	62.15±4.23	70.18±5.72	7.139	<0.001

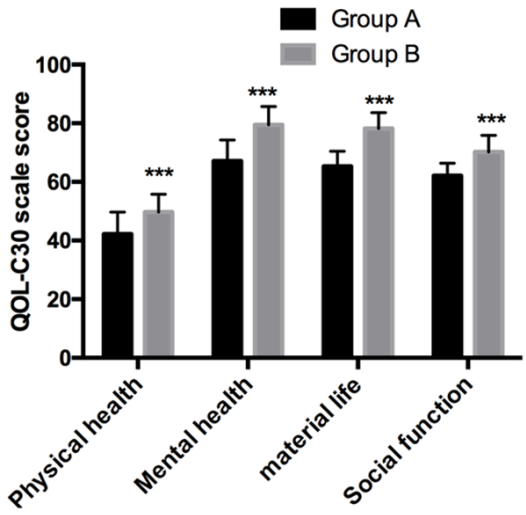

Figure 3. Comparison of the QOL-C30 scale scores. ***P<0.001, compared with group A.

were evaluated using an independent *t*-test, and the differences within each group were compared using a paired *t*-test; The enumeration data were expressed as number/percentage (n, %) and compared using an χ^2 test. The ranked data were compared using a Mann-Whitney U test. P<0.05 was considered statistically significant.

Results

Comparison of baseline conditions

There were no significant differences in the baseline conditions between the two groups (all P>0.05). See **Table 1**.

Comparison of the SAS scores

The SAS scores in group A before and after the nursing intervention were 53.29±5.20 and 42.11±6.04, respectively. The SAS scores in group B before and after the nursing intervention were 53.97±4.25 and 31.48±6.35, respectively. The scores of both groups after the nursing intervention were significantly lower than they were before the intervention (all P<0.001). Moreover, the SAS score in group B was significantly lower than it was in group A after the nursing intervention (all P<0.001). See **Figure 1**.

Comparison of the SDS scores

The SDS scores in group A before and after the nursing intervention were 59.73±4.59 and 47.86±5.06, respectively. The SDS scores in group B before and after the nursing intervention were 59.66±5.93 and 34.62±5.41, respectively. The scores of both groups after the nursing intervention were significantly lower than they were before the intervention (all P<0.001). Moreover, the SDS scores in group B were significantly lower than they were in group A after the nursing intervention (all P<0.001). See **Figure 2**.

Comparison of cancer pain intensity

After the nursing intervention, the number of patients with grade III and grade IV cancer pain in group B was significantly lower than it was in group A (P<0.05). However, the difference in the overall pain intensity between the two groups was not significant (P>0.05). See **Table 2**.

Comparison of the QOL-C30 scale scores

The physical health, mental health, material life, and social function scores in group B were significantly higher than they were in group A (all P<0.05). See **Table 3** and **Figure 3**.

Comparison of nursing satisfaction

The nursing satisfaction in group B was significantly higher than it was in group A (P<0.05). See **Table 4**.

Table 4. Comparison of nursing satisfaction

Group	Group A (n=40)	Group B (n=40)	t	P
Very satisfied	10 (25.00)	28 (70.00)		
Satisfied	4 (10.00)	10 (25.00)		
Neutral	6 (15.00)	1 (2.50)		
Not satisfied	20 (50.00)	1 (2.50)		
Total satisfaction rate	14 (35.00)	38 (95.00)	31.650	<0.001

Discussion

In this study, we analyzed the mental health status and pain intensity in both groups before and after the nursing intervention. It was found that the SAS scores of the two groups were significantly lower than they were before the nursing intervention; furthermore, the SAS score of group B after the nursing intervention was significantly lower than it was in group A. We also looked at the SDS scores of the two groups. Similarly, the results showed that the SDS scores of the two groups were significantly lower than those before the nursing intervention, and the SDS score of group B was significantly lower than it was in group A after the nursing intervention. Previous studies have shown that negative emotions such as anxiety and depression may lead to a poor prognosis in patients [20]. We found that, after the nursing intervention, the number of patients with grade III and grade IV pain in group B was lower than it was in group A. In recent years, with the continuous improvement of the quality of nursing care, a large number of clinical studies has revealed that appropriate psychological intervention for patients with advanced cancer could effectively improve the patients' cooperation and alleviate the pain associated with the intense treatment. So the patients had fewer negative emotions and were able to achieve better treatment outcomes [21]. Our study also confirmed that the implementation of death education on the basis of routine nursing care could effectively relieve the anxiety and depression in patients with advanced HCC; in the meantime, the patients who received death education experienced less pain than the patients in the routine nursing care group. The results are consistent with a previous study [22].

We also compared the quality of life using the QOL-C30 scale in group A and group B after one month of nursing intervention. The physical health, mental health, material life, and social function scores in group B were significantly higher than those in group A. It has been proven that both physical health and mental health are indispensable aspects that reflect a patient's quality of life, and a good psychological state also promotes a patient's physical health [23]. Usually, patients with advanced cancer would undergo a variety of treatment methods and eventually have to face the expected stage of death. During this period, patients must withstand pain, fear of death, and an enormous economic burden [24]. Previous studies have confirmed that while medical staff continue to improve the quality of nursing care, reasonable death education for terminal cancer patients could not only improve the patient's negative emotions, but also had a positive impact on the patient's physical health and social function [25]. Therefore, we believe that the effect of death education on the quality of life of patients with advanced HCC is better than that of conventional nursing care.

Finally, we looked at the nursing satisfaction of the patients in group A and group B. The results showed that the total satisfaction rate in group B was significantly higher than it was in group A. This indicates that patients with advanced HCC had a higher acceptance of death education than conventional nursing care alone. In recent years, relevant clinical studies have also confirmed that advanced cancer patients or their family members were more satisfied with death education than with routine nursing care alone [26].

However, there are some limitations to this study. We didn't compare the biochemical parameters of the two groups, and the nursing regimen involved could be influenced by the local treatment levels which were different than in other areas. Moreover, the results would be more convincing if the patients were followed up for a longer period of time. These limitations will be dealt with in our future studies.

In summary, the implementation of death education on the basis of routine nursing care is conducive to improving the mental health and

quality of life in patients with advanced HCC. Patients can also experience less cancer pain and have higher nursing satisfaction. Therefore, death education is highly recommended in clinical practice.

Disclosure of conflict of interest

None.

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