

Original Article

Clinical efficacy of meticulous nursing intervention for elderly patients with digestive system tumors

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Abstract: Objective: To explore the clinical effect of meticulous nursing intervention in the treatment of elderly patients with digestive system tumors. Methods: A total of 68 elderly patients with digestive system tumors were enrolled and randomly divided into the conventional nursing group (n = 34) and the meticulous nursing group (n = 34). The scores of clinical symptoms, quality of life, and depression, as well as nursing satisfaction were compared between the two groups. Results: Before the intervention, there were no significant differences in the observation indexes above between the two groups ($P > 0.05$). After the intervention, the overall nutritional status and nursing satisfaction in the meticulous nursing group were better than those in the conventional nursing group ($P < 0.05$). Furthermore, the meticulous nursing group showed significantly higher increases in the scores of clinical symptoms, quality of life, and depression than the conventional nursing group ($P < 0.001$). Conclusion: Meticulous nursing care has a positive clinical effect in elderly patients with digestive system tumors, which can alleviate clinical symptoms and increase patient satisfaction.

Keywords: Meticulous nursing care, digestive system tumor, nursing quality, clinical effect evaluation

Introduction

Digestive system tumors, such as esophageal cancer, gastric cancer, and rectal cancer, account for about one-third of the annual deaths among patients with malignant tumors worldwide [1, 2]. In particular, elderly patients with digestive tract tumors have attracted more attention for their poor physical function, low compliance and high incidence [3, 4].

Generally, cancer patients require long-cycle treatment and recover slowly (especially for elderly patients) with great psychological stress and poor quality of life (QoL) [5]. During chemotherapy, those suffer more from adverse reactions and psychological distress, possibly refusing or abandoning treatment, even seeking for suicide [6]. As a result, in addition to support from families, professional nursing intervention given by medical staff is essential, enabling patients to adhere to treatment, and improve compliance and psychological status [7]. It is reported that in treating long-term chronic diseases, effective nursing intervention can improve patient QoL and strengthen the belief to overcome diseases [8]. Based on rou-

tine nursing care, meticulous nursing care, a comprehensive and careful nursing model in treatment and daily life, are provided in terms of psychological counseling, life nursing, social nursing, as well as medication and follow-up guidance [9]. All these measures ensure good physical and psychological states of patients for better treatment during the whole process of treatment.

Currently, there is no in-depth study on the effect of meticulous nursing in elderly patients with digestive system tumors receiving chemotherapy. Therefore, this study investigated the effect of meticulous nursing in elderly patients with digestive system tumors, and compared the indexes of meticulous and conventional nursing care, so as to provide data support for improving the nursing quality and effectiveness after the treatment of digestive system tumors.

Materials and methods

General data

A total of 68 elderly patients with digestive system tumors undergoing chemotherapy in the

Meticulous nursing care in patients with digestive system tumors

Department of Gastroenterology of the 903rd Hospital of PLA from March 2016 to November 2019 were selected and analyzed prospectively. The patients were randomly divided into the conventional nursing group (n = 34) given routine nursing intervention and the meticulous nursing group (n = 34) given meticulous nursing intervention on the basis of routine nursing care. All patients and their families were fully informed of the study and signed the written informed consent. Ethics approval for the study was given by the Ethics Committee of the 903rd Hospital of PLA.

Inclusion and exclusion criteria

The included patients aged 60 years and older were diagnosed with digestive system tumors treated with chemotherapy. The duration of hospital stay was more than 2 weeks. All patients, who can communicate normally, had no aphasia and deafness, mental and communication disorders, organ failures, or other severe diseases.

Additionally, patients with mental illness, neurological disorders or systemic diseases, and those who have undergone surgery for tumors were excluded.

Nursing methods

The nursing intervention time of both groups was defined as time from admission to the end of treatment. During the process, the conventional nursing group received routine nursing care, including health education about diseases, good nurse-patient communication, improvement of patient compliance, and necessary humanistic care. On the basis of conventional nursing care, the meticulous nursing group received meticulous nursing care, including psychological nursing, life nursing, social nursing and medication guidance.

In terms of psychological nursing, medical staff actively communicated with the elderly patients, assessed their psychological status before chemotherapy, and understood their inner thoughts and psychological changes. For those with anxiety and depression, psychological doctors would intervene effectively with gentle voice and movement. Moreover, regular communications with the patients were built for their expression of appeals, necessary psychi-

atric treatment was given, and successful cases of recovery or significantly prolonging life were introduced to help establish their confidence in treatment.

In terms of life nursing, the patients' wards were further cleaned after admission to ensure a comfortable, clean and tidy environment with appropriate light, temperature, humidity, and ventilation. Due to their old ages, additional humanized room design and layout was also considered to reduce accidents. Meanwhile, relevant nurses should pay attention to night nursing, ask more refined questions about physical changes during visits, and answer questions patiently. Besides, the nurses understood the patient's living habits meticulously, and formulated reasonable plans as to rest and activity as well as dietary to provide all the necessary nutrition.

In terms of social nursing, the knowledge of disease and health was introduced to the patients before chemotherapy, so that they would fully understand the treatment process and plan. Furthermore, medical records were established, precautions in home nursing were told to the patients and their families, and follow-up cards were provided to help the patients timely report disease changes and the nurses quickly obtain suggestions for targeted nursing or treatment [10].

In terms of medication guidance, most elderly patients had underlying chronic diseases; hence medication guidance and supervision were necessary to the patients requiring long-term administration. According to the degree of severity and location of digestive tumors, drug selection or dosage was adjusted to avoid conflicting treatment model and reduce the risk of treatment.

Outcome measures

The nutritional status, depression scores, symptom scores, QoL scores and nursing satisfaction of the two groups were evaluated and compared.

The depression scores, symptom scores and QoL scores were the main outcome measures. Depression scores were evaluated by the Geriatric Depression Scale, which were divided into three grades, representing "normal" (0-10

Meticulous nursing care in patients with digestive system tumors

Table 1. Comparison of general data

Group	Conventional nursing group	Meticulous nursing group	t/ χ^2 /Z	P
Cases	34	34		
Gender			0.059	0.808
Male	18	17		
Female	16	17		
Age (year)	68.9±6.2	70.1±7.4	0.725	0.471
Weight (kg)	61.25±6.34	63.22±9.41	1.012	0.315
BMI (kg/m ²)	18.32±2.73	18.19±3.51	0.171	0.865
Types of cancer			-1.312	0.190
Esophageal cancer	8	6		
Gastric cancer	10	11		
Pancreatic cancer	8	8		
Rectal Cancer	8	9		
Tumor staging			0.239	0.625
T2N2M1	20	18		
T2N3M1	14	16		
Complication (n)				
Hypertension	18	20	0.239	0.625
Hyperlipidemia	17	14	0.534	0.465
Diabetes mellitus	15	14	0.060	0.806

Note: BMI: body mass index.

points), “mild depression” (11-20 points), “moderate-to-severe depression” (21-30 points) [11]. QoL was measured by items such as physical function, physiological function, social function and emotional function with a maximum score of 100 points (lower scores indicate worse QoL) [12]. Besides, clinical symptom was assessed by a self-made scale, which incorporated six items (3 points for each item), namely, physical weakness, chest tightness and shortness of breath, palpitation, mental fatigue, chest pain and night sweats with a maximum score of 100 points (higher scores represent more severe symptoms). Each index was scored early after admission and again after the intervention.

Nutritional status and nursing satisfaction were the secondary outcome measures. Body mass index was used to define the three grades of malnutrition: Grade I (mild malnutrition) as BMI 17.0-18.4, Grade II (moderate malnutrition) as BMI 16.0-16.9, and Grade III (severe malnutrition) as BMI < 16.0 [13]. Patient satisfaction with nursing was categorized into three levels: satisfied, basically satisfied and dissatisfied. Satisfaction = (satisfied + basically satisfied)/total number of cases * 100%. Each index was scored after the intervention.

Statistical analysis

Data analyses were performed with the SPSS 17.0 software. Independent t-test was adopted for comparison between the two groups as to the measurement data expressed as mean \pm standard deviation ($\bar{x} \pm sd$). Chi-square test (χ^2 test) was adopted as to the enumeration data expressed as the case/percentage (n%). P < 0.05 was considered statistically different.

Results

Comparison of general data

There was no statistical significance in the age, gender, weight, body mass index, disease types, complications and tumor staging (P > 0.05), suggesting that the two groups were comparable. See **Table 1**.

Comparison of nutritional status

Before the intervention, no significant difference was found in the nutritional status between the two groups (P > 0.05). After the intervention, a large proportion (67.65%) was present in patients with mild-to-moderate nutrition in the meticulous nursing group; patients with moderate-to-severe nutrition accounted

Meticulous nursing care in patients with digestive system tumors

Table 2. Comparison of nutritional status after nursing

Group	Cases	Normal nutrition	Mild malnutrition	Moderate malnutrition	Severe malnutrition
Meticulous nursing group	34	7 (20.59%)	8 (23.53%)	15 (44.12%)	4 (11.76%)
Conventional nursing group	34	5 (14.71%)	2 (5.88%)	18 (52.94%)	9 (26.47%)
χ^2		0.405	4.221		4.300
P		0.525	0.040		0.038

Table 3. Comparison of the quality of life scores

Group	Cases	Quality of life scores	
		Before nursing	After nursing
Conventional nursing group	34	57.82±7.21	80.95±6.12**
Meticulous nursing group	34	59.33±10.21	90.47±7.45**
t		0.704	5.758
P		0.484	< 0.001

Note: Comparison with before nursing, **P < 0.01.

Table 4. Comparison of symptom scores

Group	Cases	Symptom scores	
		Before nursing	After nursing
Conventional nursing group	34	13.62±2.74	7.56±1.28**
Meticulous nursing group	34	13.23±3.01	4.11±1.46**
t		0.559	10.360
P		0.578	< 0.001

Note: Comparison with before nursing, **P < 0.01.

Table 5. Comparison of depression scores

Group	Cases	Depression scores	
		Before nursing	After nursing
Conventional nursing group	34	20.12±4.33	13.56±3.21**
Meticulous nursing group	34	19.87±5.11	9.84±3.71**
t		0.218	4.421
P		0.828	< 0.001

Note: Comparison with before nursing, **P < 0.01.

for 55.88% (19/34) of the meticulous nursing group, as compared to 79.41% (27/34) of the conventional nursing group. Significant differences in mild nutrition and moderate-to-severe nutrition were found (P = 0.040, P = 0.038). See **Table 2**.

Comparison of QoL scores

Before the intervention, no significant difference was found in the QoL scores between the two groups (57.82±7.21 vs 59.33±10.21, P > 0.05). After the intervention, QoL scores in both

groups increased significantly (P < 0.01), while the QoL score was higher in the meticulous nursing group than in the conventional nursing group (90.47±7.45 vs 80.95±6.12, P < 0.001), indicating that meticulous nursing care has a more significant effect on QoL in elderly patients with digestive tumors compared with conventional nursing care. See **Table 3**.

Comparison of symptom scores

Before the intervention, no significant difference was found in the QoL scores between the two groups (P > 0.05). After the intervention, symptom scores in both groups reduced significantly (P < 0.01), while the meticulous nursing group showed a significantly great decrease in symptom scores than the conventional nursing group (P < 0.001), demonstrating that meticulous nursing care is more effective in alleviating

symptoms compared with conventional nursing care. See **Table 4**.

Comparison of depression scores

After the intervention, depression scores in both groups improved markedly (P < 0.01); the depression score was higher in the conventional nursing group than in the meticulous nursing group (13.56±3.21 vs 9.84±3.71, P < 0.001), suggesting that meticulous nursing care has a comparatively positive effect on emotional status. See **Table 5**.

Meticulous nursing care in patients with digestive system tumors

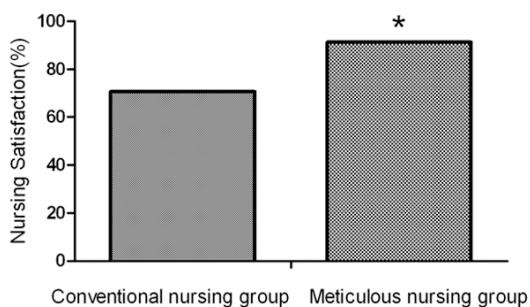


Figure 1. Comparison of nursing satisfaction. Compared with conventional nursing group, * $P < 0.05$.

Comparison of nursing satisfaction

As shown in **Figure 1**, the satisfaction rate was 70.59% (24/34) in the conventional nursing group (“satisfied” in 10 cases, “basically satisfied” in 14 cases and “dissatisfied” in 10 cases), as compared to 91.18% (31/34) in the meticulous nursing group (“satisfied” in 14 cases, “basically satisfied” in 17 cases and “dissatisfied” in 3 cases). It was found that patients receiving meticulous nursing intervention were more satisfied with care than those receiving conventional nursing intervention ($P = 0.031$).

Discussion

The improved living standards and accelerated pace of life have greatly changed the dietary structure and style in recent years, leading to an increasing number of patients with digestive system diseases. In particular, the incidence of digestive system tumors in the elderly patients has increased significantly, endangering human health and safety seriously, and causing great pain to the patients and their families. Due to the long-term treatment and administration, patients with digestive system tumors suffer considerably, endure great physical and psychological stress, and thus generate adverse emotions mostly. The negative emotions are usually conveyed by poor compliance and antagonistic behaviors, posing great challenges to actual nursing work [14, 15].

Meticulous nursing care is a careful and refined nursing model that has been developed in recent years on the basis of routine nursing care. In the nursing model, plenty of clinical experience was summarized from literature, and targeted nursing intervention were formu-

lated and implemented according to the characteristics of diseases. The comprehensive and meticulous nursing intervention in the treatment and rehabilitation ensures a scientific and effective guarantee, as well as a warm, soothing and trusting atmosphere. Studies have unveiled that meticulous nursing care has a significant positive effect on the nursing quality, postoperative QoL, clinical symptoms, and short-term compliance and long-term treatment cooperation in patients, especially in elderly patients [16, 17].

In addition, it has been reported that long-term hospitalization for internal medicine patients possibly lead to psychological issues manifested as adverse emotions (e.g., anxiety and depression). Particularly, patients with digestive system diseases are more prone to endure uncontrolled emotions such as irritability and anxiety, which can be effectively alleviated to delay the disease development through meticulous psychological nursing [18, 19]. Similarly, Tian et al. argued that patients with digestive system diseases generally had poor nutritional status, significantly low QoL below the standards of normal population or patients with other diseases, and relatively severe clinical symptoms. Through effective nursing measures, as well as timely and long-term nutritional evaluation and intervention, the nutritional status and clinical symptoms were ameliorated, the intervals between repeated cycles of treatment were shortened, and the prognosis was improved [20]. In this study, meticulous nursing model was applied in terms of psychological nursing, life nursing, social nursing and medication guidance. The results indicated that meticulous nursing care has a good effect on emotional state, nutritional status, clinical symptoms, and nursing satisfaction in elderly patients with digestive system tumors. Similarly, evidences have supported that nursing satisfaction is directly associated with degree of fineness, therefore, the meticulous and comprehensive nursing model is important, especially for the lonely and elderly patients [21-23].

Several limitations, such as its small sample size and shortage of disease categories, still remain in this study though we have achieved certain positive results in meticulous nursing intervention for elderly patients with digestive system cancer. Hence, further studies are

desirable to get a more precise conclusion in the future.

In summary, meticulous nursing intervention has a significant effect on the psychological status, clinical symptoms, QoL, and patient satisfaction in elderly patients with digestive system tumors.

Disclosure of conflict of interest

None.

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Meticulous nursing care in patients with digestive system tumors

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