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Original Article

Effects of comprehensive nursing intervention on recovery and psychological states of patients with peptic ulcers

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Abstract: Objective: The aim of this study was to explore the effects of comprehensive nursing intervention on rehabilitation and psychological states of patients with peptic ulcers. Method: From January to June 2018, 172 patients with peptic ulcers were randomly divided into the comprehensive nursing group and regular nursing group. Psychological conditions and clinical efficacy of treatment in the two groups of patients were compared before hospitalization (T1), hospitalization 7 days (T2), and hospitalization 14 days (T3). Result: In terms of psychological conditions, there were no significant differences in SDS and SAS scores at T1 between the two groups (P>0.050). At T2 and T3, SAS and SDS scores of the comprehensive group were significantly better than those of the regular group (P<0.050). For patients in the comprehensive group, clinical efficacy was significantly higher than that in the regular nursing group (P<0.001). Regarding nursing effects, the comprehensive group's satisfaction survey scores were significantly higher than those of the regular group (P<0.050). Moreover, hospitalization duration of the comprehensive group was significantly shorter than that of the regular group (P<0.050). Conclusion: Comprehensive nursing can effectively improve psychological conditions and clinical efficacy of treatment in patients with peptic ulcers, accelerating the rehabilitation process.

Keywords: Comprehensive nursing, peptic ulcers, recovery, psychological states

Introduction

Relevant data has shown that incidence of peptic ulcers has now reached 5%~10% of the worldwide population, rising in recent years [1-6]. The pathogenesis of digestive ulcers has not been fully elucidated and there are no effective methods to completely cure digestive ulcers [7]. Faced with the extremely long course and extremely high recurrence rates of peptic ulcers, patients must endure repeated abdominal pain, nausea, abdominal distension, loss of appetite, and other symptoms. It not only impairs the physical function of patients, but also causes great damage to mental and psychological states [8, 9]. Therefore, in the course of treatment of peptic ulcers, corresponding psychological counseling and intervention might reduce patient psychological burdens, improving prognosis of the disease [10].

Comprehensive nursing is a nursing mode that combines clinical nursing and psychological counseling. The purpose of comprehensive nursing is to improve all aspects of patient conditions through all-round nursing, better coordinating treatment and rehabilitation [11, 12]. However, no studies have focused on the value of comprehensive nursing in peptic ulcers. Data shows that the application of comprehensive nursing for patients with various diseases has achieved better prognosis than application of regular nursing [13-15]. Therefore, it was speculated that comprehensive nursing could also improve psychological states of patients with peptic ulcers, improving prognosis.

Materials and methods

General information

From January to June 2018, 172 patients with peptic ulcers were recruited as subjects. Acc-

ording to the numerical table randomization method, the two groups of patients were divided into the comprehensive group (n=86) and regular group (n=86). In the comprehensive group, there were 59 males and 27 females, aged 32.25+11.57 years old. In the regular group, there were 62 males and 24 females, aged 33.68+12.72 years old. This study was approved by the Ethics Committee. All subjects in this study provided informed consent.

Inclusion and exclusion criteria

Inclusion criteria: Patient conditions were consistent with clinical symptoms of peptic ulcers [16]; Patients were newly diagnosed cases of peptic ulcer disease perforation of the stomach and duodenum; Patients were diagnosed with anterior wall perforation either in the pre-pyloric region or the first part of duodenum; Patients included both males and females, healthy or asymptomatic; Patients were in the 22-26 age group; Patients were expected to stay for more than 14 days in the hospital.

Exclusion criteria: Patients scheduled for surgical operations due to serious complications; Cancer patients; Combined tumor patients; Patients with major organ failure; Patients with pregnancies and lactation; Patients with hepatic and renal insufficiency; Patients that could not live by themselves; Patients with other conditions involving stomach or duodenum, such as gastroenteritis, gastritis, gastroparesis, and malignancies; Patients with perforation in regions other than the pre-pyloric region or the first part of duodenum; Patients with heart disease that are on low dose aspirin or patients unwilling to participate in the study.

Methods

Nursing details of the regular group: Patients were instructed to take medication, supervised to develop good eating habits, and regularly checked for diet and rehabilitation. They were provided with basic medical and nursing care, such as checking blood pressure and inserting catheters. Comfort levels were ensured by helping them bathe or dress. Health care was discussed and their status was reported to registered nurses and doctors.

The comprehensive group received comprehensive nursing intervention. Content included: 1) Patients were assessed for psychological status after admission and were analyzed for main causes of negative emotions. The aim was to make appropriate interventions and counsel patients to improve psychological states. They provided psychological counseling to patients daily, sharing relevant disease-related knowledge and explaining successful treatment cases. This helps patients gain confidence in overcoming the disease; 2) Diseases were targeted with diet, which included digestible and easily absorbed fluids and semi-liquid foods. In combination with the intake of vitamins and vegetables, patients were advised to quit smoking and drinking alcohol. They were advised to avoid irritating foods. They were also made to follow the principle of eating small but frequent meals; 3) Patients were guided and supervised to use drugs in strict accordance with instructions. Medical staffs should have a full understanding of relevant drugs and familiarize patients with pharmacological reasoning, enabling them and their families to understand adverse reactions and drug response measures. They should strictly supervise patients, forbidding them to take drugs, such as aspirin, that may stimulate gastric mucosa. Through simple and appropriate rehabilitation training, patients were instructed to assist and establish a prognostic communication group. Since patients may encounter adverse conditions after discharge, they should learn how to deal with them through the communication group. If the disease recurs, they should return to the hospital for treatment.

Outcome measures

Psychological condition of patients: SAS and SDS rating scales (attached) were used to detect the psychological status of the two groups before hospitalization (T1), hospitalization 7 days (T2), and hospitalization 14 days (T3). A score of 50 was the minimum criteria for good psychological health. Higher indicate worse patient conditions. If clinical symptoms disappear and, occasionally, the ulcer disappears, then the evaluation is markedly effective. If clinical symptoms did not decrease and their ulcer did not heal or even worsened, then the evaluation was ineffective.

Nursing effect surveys: An anonymous rating survey was conducted for patients discharged from the hospital. The evaluation was conduct-

Table 1. Comparison of clinical data [n (%)]

	Comprehensive group (n=86)	Regular group (n=86)	t or X^2	P
Age	32.25±11.57	33.68±12.72	0.771	0.442
Body weight (KG)	76.83±12.86	75.11±11.19	0.936	0.351
BMI	24.69±3.59	25.16±2.88	0.947	0.345
Course of disease (day)	4.87±1.66	5.12±1.86	0.930	0.354
Gender			0.251	0.617
Male	59 (68.60)	62 (72.09)		
Female	27 (31.40)	24 (27.91)		
Ulcer location			0.372	0.542
Stomach	46 (53.49)	42 (48.84)		
Duodenum	40 (46.51)	44 (51.16)		
Smokes			0.489	0.485
Yes	66 (76.74)	62 (72.09)		
No	20 (23.26)	24 (27.91)		
Drinking			0.034	0.853
Yes	68 (79.07)	67 (77.91)		
No	18 (20.93)	19 (22.09)		
Sports habit			0.861	0.354
Yes	16 (18.60)	21 (24.42)		
No	70 (81.40)	65 (75.58)		
Living environment			1.244	0.265
Town	77 (89.53)	81 (94.19)		
Rural	9 (10.47)	5 (5.81)		

ed from three perspectives, nursing satisfaction, understanding of disease treatment, and psychological states. A full score was 100, with higher scores indicating higher evaluation. The total length of hospital stays was recorded.

Life quality evaluation: The EORTC-QLQ-C30 of cancer patients was used for evaluation [18]. Scores included symptom areas (fatigue, pain, nausea, vomiting, inappetence, insomnia, and dreaminess) and functional areas (cognitive function, emotional function, somatic function, social function, and role function). A linear equation was used to convert each field score to a standard score of 0 to 100. Lower symptom field scores indicate less obvious symptoms. Higher functional field scores indicate better function. The survey was clear to the patients. Patients were followed up for three months after discharge.

Statistical methods

Data were analyzed and processed using SPSS 24.0 statistical software (Beijing Sitron Weida Information Technology Co., Ltd.). Count data, such as clinical efficacy, are expressed as rates. Chi-squared test was used for comparisons between groups. Measurement data, such as SAS and SDS scores, are expressed as mean plus or minus standard deviation. Moreover, t-test was used for intergroup comparisons. For multitime data, repeated measures ANOVA, followed by post-hoc Bonferroni's test, was used. P< 0.050 indicates statistical significance.

Results

Comparison of clinical data

Age, weight, BMI, duration of disease, gender, ulcer location, smoking, drinking, exercise habits, and living environment were compared between the two groups. No significant differences were found (P>0.050, **Table 1**), indicating that the two groups were comparable.

Psychological comparison

There were no significant differences in SDS and SAS scores at T1 between the two groups (P>0.050). At T2, SAS and SDS scores of the comprehensive group were, respectively, (43.27±4.69) points (44.83±6.16), significantly lower than regular group SAS and SDS scores, (52.33±4.82) and (51.77±6.35) points (P< 0.050). At T3, SAS and SDS scores of the comprehensive group were, respectively, (32.23+ 5.36) and (33.07+4.61), significantly lower than those of the control group (49.63+6.74) and (49.76+5.83) (P<0.050). SAS and SDS scores at T2 were significantly lower than at T1 (P< 0.050), while those at T3 were significantly lower than at T2 (P<0.050, **Figures 1** and **2**).

Comparison of clinical efficacy

There were no significant differences between the two groups (P>0.050). In the comprehensive group, 72.09% (62 cases) were cured, significantly higher than 43.02% (37 cases) cured in the regular group (P<0.001). The number of

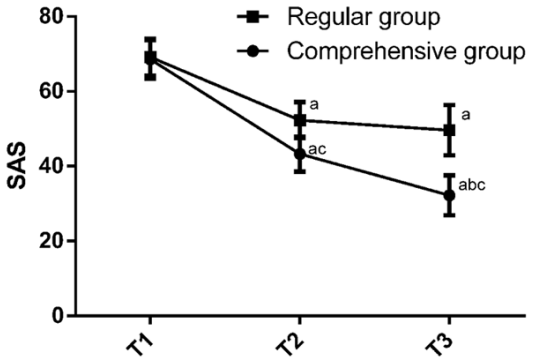

Figure 1. Comparison of SAS scores between the two groups. "a" represents comparison with the SAS score of the same group at T1, P<0.050; "b" represents the comparison of SAS scores at T2 with that in the same group, P<0.050; "c" represents comparison with the SAS score of the regular group in the same section, P<0.050.

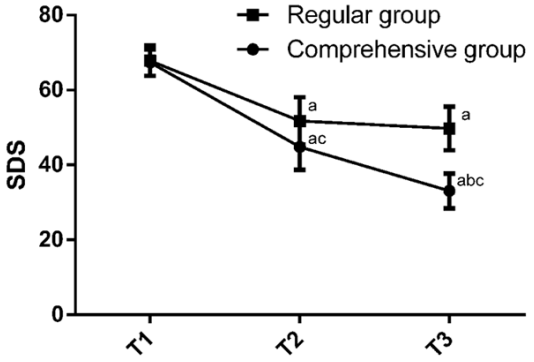

Figure 2. SDS scores were compared between the two groups. "a" represents SDS score at T1 of the same group, P<0.050; "b" represents SDS score at T2, P<0.050; "c" represents for the comparison of SDS score of the regular group in the same section, P<0.050.

patients in the comprehensive group was 4.65% (4 cases), significantly lower than that of the regular group (18.60% 16 cases) (P= 0.004). Only 1.16% (1 case) in the comprehensive group showed no treatment effects, while 8.14% (7 cases) of the regular group showed no treatment effects. Differences between the two groups were statistically significant (P= 0.030, **Table 2**).

Comparison of nursing effects

The comprehensive nursing satisfaction survey score (86.72+6.97) was significantly higher than the regular nursing satisfaction survey score (72.54+10.82) (P<0.050). Hospitalization time of patients in the comprehensive group was (16.77+2.35) days, while that of patients in the regular group was (21.84+3.54) days. Hence, the hospitalization time of patients in the comprehensive group was significantly shorter than that of patients in the regular group (P<0.050, **Figures 3** and **4**).

Quality of life comparison

In terms of symptoms, there were no significant differences between the two in the general group fatigue and insomnia (P>0.050), while other symptoms were significantly different (P<0.050). Differences in pain symptoms were most significant (P<0.001). The mean score of the comprehensive group was 9.84+2.36, significantly lower than the mean score of the regular group (12.62+2.83) (P<0.001). In terms of functional areas, there were no significant differences in scores of cognitive function, social function, and role function between the comprehensive group and regular group (P>0.050). In terms of emotional function and physical function, the comprehensive group's scores were significantly higher than regular group scores (P<0.001). The comprehensive group's average score on functional areas was (84.08+ 5.03), significantly higher than the average score of the regular group on functional areas (77.56+5.68), (P<0.001, **Table 3**).

Discussion

Gastrointestinal ulcers are a common digestive disease. They not only causes great harm to the body, but also increases negative emotions, such as anxiety and fear, to a certain extent [19]. Data shows that the psychological burden of patients with peptic ulcers is too large, increasing the secretion of adrenaline and the speed of gastrointestinal peristalsis. This leads to more intense gastric acid secretion and further aggravation of mucosal congestion. This not only has a significantly adverse effect on treatment, but also may cause more serious diseases in patients [20, 21]. Therefore, for rehabilitation treatment of patients with peptic ulcers, it is not only necessary to treat the disease, but also to improve psychological states of patients. While treating the underlying disease, it is necessary to help the patient gain confidence in overcoming the disease and maintaining a healthy state of mind. These are of great significance for the rehabilitation pro

Table 2. Comparison of clinical efficacy [n (%)]

	Comprehensive group (n=86)	Regular group (n=86)	X^2	P
Cure	62 (72.09)	37 (43.02)		
Significant effect	19 (22.09)	26 (30.23)		
Better	4 (4.65)	16 (18.60)		
Invalid	1 (1.16)	7 (8.14)	4.720	
		7 (8.14)		<0.001

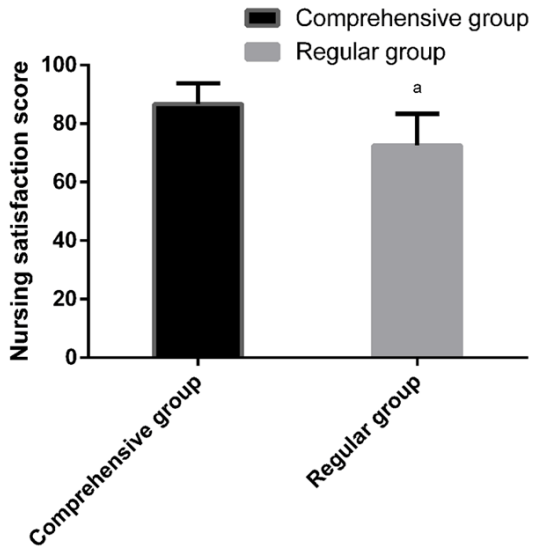

Figure 3. Nursing satisfaction scores were compared between the two groups. "a" represents for comparison with comprehensive group nursing satisfaction score, P<0.050.

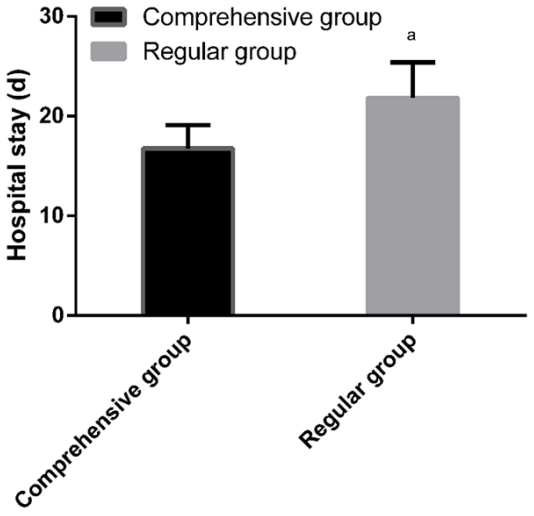

Figure 4. Hospital stay was compared between the two groups. "a" represents the time of hospitalization compared with the comprehensive group, P<0.050.

cess and prognosis [22]. Psychological intervention has increasingly been given more attention in clinical practice. Both domestic and international studies have shown that psychological counseling can improve patient recovery [23, 24]. However, psychological counseling intervention for patients with digestive ulcers, which is supported by relevant research literature, is still lacking. This study adopted strict inclusion and exclusion criteria, according to the nursing operation manual and reliable data, carrying out targeted nursing intervention. Using advanced statistical software for data analysis, the current study aimed to examine the clinical effects of comprehensive nursing on patients with peptic ulcers, investigating its influence on psychological states.

Results of this study indicate that SDS and SAS scores of patients in the comprehensive group were significantly better than those of the patients in the regular group. This suggests that comprehensive nursing can significantly reduce occurrence of negative emotions, such as anxiety and depression. The findings of this paper are consistent with the experimental results of Honda et al. in a study on comprehensive nursing applied to Alzheimer's disease [25]. The main reason for the difference in scores between the two groups was that the digestive tract ulcer was a chronic ulcer disease. It was difficult to treat and had a long treatment period. In the long treatment process, due to a lack of awareness about the disease and the pain caused by the disease, patients were prone to a number of negative emotions, including anxiety, restlessness, fear, and rage [26]. Comprehensive nursing requires nurses to provide timely psychological counseling to patients, explaining successful treatment cases and the normal symptoms of the disease. This ensures that patients have a preliminary understanding of the disease. These measures help patients understand that it is not very difficult to overcome the disease. Thus, they are filled with hope for rehabilitation, as well as gaining confidence to fight the disease, checking the emergence of negative emotions. Due to the tension between doctors and patients, patients are also prone to develop distrust for medical staffs and their suggestions

Table 3. EORTC-QLQ-C30 score comparison

		Comprehensive group (n=86)	Regular group (n=86)	t	P
Symptom area	Exhausted	8.33±3.14	9.15±2.86	1.790	0.075
	Pain	9.68±2.15	15.23±3.86	11.653	<0.001
	Nausea	13.24±2.86	18.77±3.68	11.002	<0.001
	Vomiting	6.87±1.57	7.68±2.05	3.196	0.002
	Appetite	15.82±2.87	19.57±3.69	7.439	<0.001
	Insomnia	5.07±1.54	5.32±0.82	1.329	0.186
The average score		9.84±2.36	12.62±2.83	6.996	<0.001
Functional area	Cognition	83.74±5.24	84.26±6.14	0.597	0.551
	Mood	92.63±3.84	68.97±6.24	29.953	<0.001
	Body	80.33±5.24	72.14±5.19	10.302	<0.001
	Society	83.17±6.85	82.16±5.18	1.091	0.277
	Character	80.54±3.97	80.25±5.63	0.390	0.697
The average score		84.08±5.03	77.56±5.68	7.969	<0.001

[27]. Through teaching activities and communication between the nursing staff and patients, trust in the medical staff gradually improves and a closer relationship develops between doctors and patients. This improves patient compliance with treatment. Increased trust in treatment arrangements further accelerates the process of rehabilitation. Therefore, the clinical efficacy of nursing intervention in two groups of patients was compared to clarify the effects of comprehensive nursing. Clinical efficacy of the treatment was significantly higher in the comprehensive group than the regular group. The number of patients with ineffective treatment was significantly lower, compared to the regular group. This further proves the value of comprehensive nursing for patients with peptic ulcers. The main reason is not only the improvement in psychological factors, but also dietary intervention. In the treatment of digestive ulcers, poor eating habits can cause rhythm of gastric acid secretion and damage to gastrointestinal function. Poor dietary habits may also cause recurrence of digestive ulcers in patients with prognosis [28]. Through comprehensive nursing care, supervision of patient diets will not only speed up the recovery of the digestive tract and improve the efficacy of treatment, it also helps patients develop good eating habits and reduce recurrence of peptic ulcers. The use of wrong medication during treatment is also one of the main reasons for the deterioration of patient conditions. Due to varying professional abilities of nursing staffs, their understandings of medicine are different. When comprehensive nursing requirements are met, the nursing staff understands the drugs and effectively avoids occurrence of medication errors during rehabilitation process. They also share basic pharmacological knowledge with patients. This ensures that patients have a preliminary understanding of the normal effects of taking the drugs. Wrong interventions will not be undertaken, which will further improve treatment efficiency.

Comparing nursing satisfaction scores and hospitalization times of the two groups, the comprehensive group was found to be superior to the regular group, further proving that comprehensive nursing improves treatment effects for patients with peptic ulcers. It shortens the treatment period and improves patient evaluations of the medical staff. Prognosis quality of life scores indicate that quality of life of patients in the comprehensive group was significantly better than that of the regular group.

In this study, efficacy of treatment and psychological statuses were different for patients with peptic ulcers that received comprehensive nursing and those that received regular nursing. The study still had some limitations, however, due to limited experimental conditions. For example, since the experimental period was short, effects of comprehensive nursing on the prognosis of long-term peptic ulcers could not be evaluated. Moreover, due to differences in living conditions of the study subjects, comprehensive follow-up surveys were not conducted and recurrence rates of peptic ulcers were not calculated. In addition, the research object base was small. Thus, the population was relatively homogeneous, making it impossible to conduct statistical analysis of big data. This study did not consider the fact that differences in therapeutic effects are related to race and population.

In conclusion, comprehensive nursing can effectively improve mental states of patients with peptic ulcers, improve the clinical efficacy of

treatment, and accelerate the rehabilitation process. Therefore, it is worthy of clinical promotion.

Disclosure of conflict of interest

None.

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