

Original Article

Clinical efficacy of comprehensive continuing care for early post-discharge patients with colostomy caused by rectal cancer

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Abstract: Objective: Our aim was to explore the clinical effect of comprehensive continuing care in early post-discharge patients with colostomy caused by rectal cancer. Methods: We enrolled 60 patients with rectal cancer to the Central Hospital of Wuhan, Tongji Medical College, Huazhong University of Science and Technology from December 2018 to December 2019 for this retrospective study. According to different nursing methods, the patients were divided into the continuing care group (n=30) given comprehensive extended care and the routine care group (n=30) given conventional nursing care. Results: The self-rating anxiety scale and self-rating depression scale scores in the continuing care group were much lower than those in the routine care group (both $P < 0.001$). The self-care ability score, quality of life score and nursing satisfaction were all significantly better in the continuing care group than in the routine care group ($P < 0.05$, $P < 0.001$ and $P < 0.05$, respectively). Moreover, the complication rate was markedly lower in the continuing care group than in the routine care group ($P < 0.05$). Conclusion: Comprehensive continuous nursing is conducive to the rehabilitation of early post-discharge patients with colostomy caused by rectal cancer, and can effectively improve psychological status. Therefore, it is worthy of being widely used and promoted in clinical practice.

Keywords: Comprehensive continuing care, early post-discharge period, enterostomy, clinical efficacy

Introduction

In recent years, there has been a rise in the incidence of rectal cancer with the changes of living standards and environment in China. Clinically, colostomy is required in most of the patients with rectal cancer. Its effect is comparatively obvious, however, owing to the changes caused by colostomy, the patients may have corresponding emotional disorders and psychological stress after discharge, which directly reduce their quality of life (QoL) [1, 2]. As a nursing method, continuing care is focused on the continuity of nursing care after discharge, which can prevent or relieve the negative emotions of patients and reduce complications timely and effectively. At present, continuing care plays an important nursing role, and can help patients markedly improve the physical conditions and minimize adverse

psychological effects, thus being highly valued and widely used among medical staff.

Telephone follow-up for stoma patients is confirmed as a valid intervention for better adaptation in the early stage of discharge [3]. However, the efficacy is greatly affected by its irreparable disadvantages, such as invisibility and language barriers, especially for those who are old and frail with low educational level, language barriers or hearing impairment [4]. As a result, comprehensive continuing care was applied for patients with colostomy in the early postoperative period to make up for the shortcomings of telephone intervention. Based on the telephone intervention, the continuing care model obtained from Bandura social learning theory and led by stoma care nurses is performed with additional manual guidance and WeChat communication after discharge [5]. Herein, we

Comprehensive continuing care for stoma patients

investigated the clinical effect of comprehensive continuing care for rectal cancer patients in the early postoperative period, hoping to promote the self-care ability, self-efficacy and QoL to help them return to society as soon as possible.

Materials and methods

General data

We selected 60 patients undergoing rectal cancer surgery admitted to the Central Hospital of Wuhan, Tongji Medical College, Huazhong University of Science and Technology from December 2018 to December 2019 for this retrospective study. All patients were divided into the continuing care group (n=30) given comprehensive extended care and the routine care group (n=30) given conventional and standard care.

The patients were included if they were diagnosed with rectal cancer through pathological biopsy, and accepted rectal resection with permanent colostomy without serious postoperative complications [6]; had good treatment compliance and communication ability; presented with no heart, liver, kidney and other serious diseases as well as no bleeding and infection after surgery. Additionally, patients with incomplete data, coagulation disorders, or depression and mental disorders were excluded. Written informed consent was obtained from all patients and ethics approval for the study was given by the Ethics Committee of the Central Hospital of Wuhan, Tongji Medical College, Huazhong University of Science and Technology.

Nursing methods

The patients were classified into continuing care group and routine care group according to different nursing methods. The relevant data of both groups were collected at one month after discharge.

The routine care group received conventional post-discharge home care, including regular distribution of health manuals, routine monitoring of recovery status and professional guidance for the replacement of stoma bags.

Based on the routine care group, the continuing care group received extended nursing measures, which are summarized as follows.

First, our hospital established a WeChat group mainly composed of attending doctors and nursing staff for better management, and made measures to ensure the mastery of relevant methods and precautions of all members.

Second, relevant nurses formulated a preliminary nursing plan for each patient, and timely made some improvement. Since many patients suffered from certain negative emotions due to their diseases or family status, the nurses needed to make more communications with the patients to minimize their negative psychological effects [7].

Third, our management group established a WeChat group among the patients for better functional rehabilitation and health self-management support. By this way, the patients could discuss about recovery status through WeChat, which also helped the nurses become more familiar with the patients' knowledge levels on colostomy. Thus, better nursing care can be provided for the patients to alleviate their symptoms. During the process, nursing staff should actively understand patients' feelings in treatment so as to explore shortcomings and improve relevant nursing projects [8, 9].

Fourth, the management group provided psychological guidance during the whole period of treatment. They needed to timely introduce relevant treatment methods and medical information to the patients and communicate with them via WeChat to actively provide guidance.

Fifth, the medical staff needed to ensure proper amount of exercise and strict control of various dietary indicators among the patients according to the disease feedback, and asked them to maintain good sleep, especially in terms of keeping early hours, for better and sooner recovery.

Sixth, the management group can conduct offline peer education and special lectures to systematically answer the patients' questions, and encourage them to actively exercise, which is conducive to controlling relevant indicators and reducing postoperative complications [10, 11].

Outcome measures

The outcome measures included the self-rating anxiety scale (SAS) and self-rating depression

Comprehensive continuing care for stoma patients

Table 1. Comparison of general data (n, $\bar{x} \pm sd$)

Items	Routine care group (n=30)	Continuing care group (n=30)	t/ χ^2	P
Age (year)	64.9±5.8	65.5±5.2	0.418	0.587
Disease course (year)	2.28±0.61	2.27±0.60	0.064	0.949
BMI (kg/m ²)	20.93±3.24	21.26±3.87	1.527	0.663
Spouse				
Yes	17	19		
No	13	11	0.278	0.598
Preoperative complications				
Yes	9	7		
No	21	23	0.431	0.559

Note: BMI: body mass index.

scale (SDS) scores, self-care ability, complication rates, and nursing satisfaction.

SAS and SDS were used to assess the adverse psychological status of the patients at discharge and after one month of care, and higher scores indicate more severe anxiety and depression, respectively.

Self-designed questionnaire was applied to compare the self-care ability before and after intervention between the two groups. The Cronbach's α coefficient was 0.93 and the Spearman-Brown split-half correlation value was 0.85. Four dimensions, namely, self-care skills, health knowledge level, self-responsibility and self-consciousness (50 points each) were incorporated and higher scores reveal better self-care ability [12].

The complications (stoma mucosal bleeding, stoma ischemia, mucocutaneous separation, anastomotic stricture) were recorded after one month of care, and the incidence of complications was calculated. Incidence of complications (%) = (total number of complication cases)/total number of cases * 100%.

The QoL of the patients was recorded at discharge and after one month of care, including physiological function, psychological function, social function, material life, environment, and independence. The maximum score was 100 points, and higher scores reveal better QoL [13].

The self-made nursing satisfaction questionnaire (responsible nurse service quality-patient evaluation form) with total 18 items was adopted to evaluate the nursing satisfaction, which

was classified into very satisfied (50 points), satisfied (45 points), fairly satisfied (35 points), and dissatisfied (25 points) with maximum score of 100 points. The Cronbach's α coefficient was 0.91 and the Spearman-Brown split-half correlation value was 0.87. The satisfaction (%) = (very satisfied + satisfied) cases/total number of cases * 100%.

Statistical analysis

Data analyses were performed with the SPSS 22.0 software package. The measurement data with normal distribution were expressed as mean \pm standard deviation ($\bar{x} \pm sd$). Independent t-test was used for the comparison between the two groups, and paired t-test was applied for the comparison before and after intervention within the same group. Chi-square test (χ^2 test) was adopted for the comparison of 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, disease course, and body mass index between the two groups ($P > 0.05$), suggesting that the two groups were comparable. See **Table 1** for more details.

Comparison of SAS and SDS scores

At discharge, no statistical significance was found in the SAS and SDS scores between the two groups (both $P > 0.05$). After one month of care, the continuing care group indicated much lower SAS and SDS scores than the routine care group (both $P < 0.05$). Meanwhile, the SAS and SDS scores in both groups were significantly reduced as compared to those before the intervention. (both $P < 0.05$). See **Table 2**.

Comparison of self-care ability scores

Before the intervention, no statistical significance was revealed in the scores of self-care skills, health knowledge level, self-responsibility

Comprehensive continuing care for stoma patients

Table 2. Comparison of SAS and SDS scores (points, $\bar{x} \pm sd$)

Group	SAS scoring		SDS	
	At discharge	After one month of care	At discharge	After one month of care
Continuing care group (n=30)	65.36±11.64	47.22±7.36*	61.36±10.69	45.36±8.05*
Routine care group (n=30)	66.21±11.93	59.63±8.44*	61.14±10.97	52.47±9.34*
t	0.334	7.267	0.094	3.781
P	0.739	<0.001	0.925	<0.001

Note: Compared with the scores at discharge within the same group, *P<0.05. SAS: self-rating anxiety scale; SDS: self-rating depression scale.

Table 3. Comparison of self-care ability scores (points, $\bar{x} \pm sd$)

Items	Routine care group (n=30)	Continuing care group (n=30)	t	P
Self-consciousness				
At discharge	17.94±3.81	18.05±3.84	0.111	0.912
After one month of care	20.03±4.03*	22.85±4.31*	2.618	0.011
Self-responsibility				
At discharge	17.12±3.75	17.20±3.74	0.083	0.934
After one month of care	19.29±3.89*	21.69±4.78*	2.122	0.037
Self-care skills				
At discharge	24.08±4.61	23.82±4.56	0.22	0.827
After one month of care	27.02±4.86*	30.15±4.97*	2.466	0.017
Health knowledge level				
At discharge	40.20±5.86	39.86±5.85	0.225	0.823
After one month of care	43.55±5.86*	48.60±8.28*	2.668	0.001

Note: Compared with the scores at discharge within the same group, *P<0.05.

Table 4. Comparison of postoperative QoL scores (points, $\bar{x} \pm sd$)

Group	Routine care group (n=30)	Continuing care group (n=30)	t	P
Psychological function				
At discharge	44.81±4.11	45.22±4.23	0.445	0.658
After one month of care	59.90±6.41*	46.81±5.64*	0.061	<0.001
Physiological function				
At discharge	43.83±4.06	42.42±4.58	1.500	0.137
After one month of care	59.31±7.24*	46.92±5.47*	8.961	<0.001
Material life				
At discharge	45.80±4.27	45.74±5.39	0.095	0.924
After one month of care	60.81±8.05*	52.83±4.44*	4.942	<0.001

Note: Compared with the scores at discharge within the same group, *P<0.05.

ty and self-consciousness as well as the total score between the two groups (all P>0.05). After the intervention, the scores of four dimensions and total score improved, while the scores in the continuing care group were markedly higher than those in the routine care group (all P<0.05). See **Table 3**.

Comparison of postoperative QoL scores

Before the intervention, no statistical significance was identified in the scores of physiological function, psychological function, social function, and material life between the two groups (all P>0.05). After the intervention, the scores of both groups were much increased (P<0.05), while the scores in the continuing care group were significantly higher than those in the routine care group (all P<0.001). See **Table 4**.

Comparison of nursing satisfaction

The continuing care group showed significantly better satisfaction with care than the routine care group (96.66% vs. 76.66%, P<0.05). See **Table 5**.

Comparison of complication rates

There was one case of stoma mucosal bleeding and one case of stoma ischemia in the continuing care group, and there were two cases of stoma mucosal bleeding, four cases of stoma ischemia, one case of mucocutaneous separation and one case of anastomotic stricture in the routine care group. The total complication rate in the continuing care group (6.67%, 2/30) was much lower than

Comprehensive continuing care for stoma patients

Table 5. Comparison of nursing satisfaction (n, %)

Group	Routine care group (n=30)	Continuing care group (n=30)	χ^2	P
Very satisfied	16	27		
Satisfied	7	2		
Fairly satisfied	5	1		
Dissatisfied	2	0		
Total satisfaction rate	23 (76.66%)	29 (96.66%)	6.377	0.041

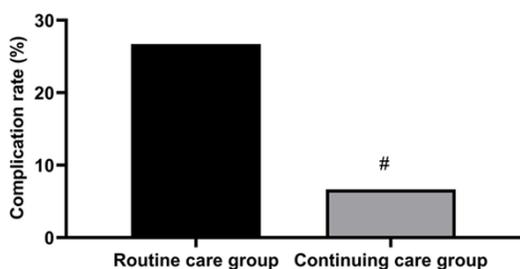


Figure 1. Comparison of complication rate. Compared with the routine care group, #P<0.05.

that in the routine care group (26.70%, 8/30; $\chi^2=4.320$, P=0.038). See **Figure 1**.

Discussion

Most stoma patients are reported to suffer from negative emotions during the surgery treatment period. Generally, follow-up care is given for the majority of colorectal cancer patients with colostomy at the early stage of the discharge, mainly including distribution of manuals for health education. Therefore, patients need to conduct self-study so as to understand the relevant knowledge. However, this may be biased due to some objective reasons. That patients can't receive timely help and have insufficient communication with their doctors makes routine follow-up care less helpful for patient recovery [14, 15]. Comprehensive continuing nursing has become an important role in nursing, which can help patients significantly enhance physical condition, minimize adverse psychological effects, strengthen doctor-patient communications, and promote the self-management, thus being highly valued and widely used by medical staff.

In the previous nursing process, untimely nursing often occurred because all information was provided by the patients, which led to great uncertainties about patients' physical health

status [16]. Under the conventional nursing model, some unclear nursing guidance made it impossible to master relevant knowledge in a timely and accurate manner [17]. Besides, it was identified that comprehensive continuing care for patients with enterostomy could ensure enhanced patient compliance with treatment [18]. In our study, the SAS and SDS scores in the continuing care group were significantly lower than those in the routine care group, suggesting that comprehensive continuing care can significantly ameliorate the QoL and adverse emotions of patients. This is because relevant data of patients receiving continuing care were well collected upon admission and proper extended care were provided according to the actual situation. Furthermore, telephone follow-up helped understand recovery status, psychological care alleviated adverse emotions, and home follow-up effectively assisted in solving problems. Similarly, establishing a WeChat group to share ostomy nursing knowledge could improve patients' self-care awareness and skills as well as reduce complication rates, and hosting friendship activities could also help patients expand their social circle and improve QoL [19]. A large number of clinical trials and survey data have unveiled that most patients had poor knowledge of rehabilitation, which resulted in negative emotions in many patients. In addition, a previous study revealed that some complications developed due to the lack of ability to self-care and psychological construction [20]. In our study, the self-care ability was significantly better, and the complication rates were markedly lower in the continuing care group than in the routine care group. Under such situation, continuing nursing care as a new model for nursing intervention was designed to facilitate transfer of professional nursing services from hospital to home, and help patients promote self-care ability and achieve self-care [21].

In summary, comprehensive continuing care is conducive to the recovery of early post-discharge patients with colostomy caused by rectal cancer, and can effectively ameliorate the psychological status, which is worth being applied and popularized clinically. However,

with the limited investigation content and relatively small sample, we are also aware that further researches on the value of continuing care are needed to reach a more precise conclusion in the future.

Disclosure of conflict of interest

None.

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Comprehensive continuing care for stoma patients

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