

# Effect of Continuing Nursing on Self-Care Ability and Nursing Satisfaction of Patients with Rectal Cancer Undergoing Colostomy

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To determine the effect of continuing nursing on self-care ability and nursing satisfaction of patients undergoing resection of rectal cancer (RC), a total of 130 patients undergoing resection of RC who were diagnosed and treated in our hospital from April 2018 to May 2019 were enrolled. Among them, 62 patients nursed under the routine nursing mode for advanced RC were assigned to Group A, and other 68 patients nursed under continuing nursing mode based on the routine nursing for patients undergoing resection of RC were assigned to Group B. The two groups were compared in mental health, emotional state, life quality, and self-care ability before and after nursing care during hospitalization and after 2 months of follow-up visit, and they were also compared in nursing satisfaction, status on discharge, and complications. After nursing care, Group B got notably lower scores of self-rating anxiety scale (SAS) and self-rating depression scale (SDS) than Group A (both  $P < 0.001$ ), and showed much better compliance than Group A ( $P < 0.001$ ). The quality of life scale (QOL-C30) scores in physical health, mental health, material life, and social function of Group B were all notably higher than those of Group A (all  $P < 0.001$ ). Additionally, after nursing care, Group B got notably higher scores of self-care ability than Group A (all  $P < 0.001$ ), and showed notably higher nursing satisfaction than Group A ( $P < 0.05$ ). Group B experienced shorter hospitalization than Group A, but there was no significant difference between them during the periods of 10 d-15 d, 16 d-21 d and 22 d-30 d (all  $P > 0.05$ ). Moreover, after nursing care, the incidence of complications in Group B was notably lower than that in Group A ( $P < 0.05$ ). Continuing nursing can provide better results of improving the emotion and life quality of patients undergoing resection of RC based on routine nursing, and it can reduce the occurrence of postoperative complications on such patients to a certain extent.

**Keywords:** Rectal cancer, continuing nursing, self-care ability, mental health, life quality

*Tob Regul Sci.*™ 2021;7(5-1): 2513-2521

DOI: [doi.org/10.18001/TRS.7.5.1.20](https://doi.org/10.18001/TRS.7.5.1.20)

Rectal cancer (RC) is a malignant tumor of the digestive tract. Its main radical cure method is surgical resection<sup>1</sup>. Surgical resection is the cornerstone of cure for RC, but the cancer occurs at a low position, so permanent artificial anus (stoma) is needed for the cancer<sup>2</sup>. Many patients undergoing resection of RC, especially those with severe complications and

those undergoing neoadjuvant radiochemotherapy or low position colorectostomy, face a higher risk of non-closure of temporary stoma<sup>3</sup>. Therefore, besides surgical resection, nursing methods are also of great significance for the improvement of life quality and health of patients<sup>4</sup>. As current medicine develops and improves continuously, patients

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with RC undergoing colostomy can have a relatively better recovery, which is of great significance in improving their life quality. Appropriate and effective nursing intervention for patients undergoing resection of RC is a major issue in improving the life quality of such patients<sup>5, 6</sup>.

With the continuous development of nursing concept, better psychology and life quality of patients are increasingly required in the related medical environment<sup>7, 8</sup>. Nursing for stoma in patients after resection of RC is risky, and its effect directly affects the operation quality and prognosis of patients. Therefore, more attention should be paid to nursing safety in the nursing for stoma. Moreover, research shows that rejection or non-cooperation with nursing in the treatment of some patients in clinical practice seriously compromises the surgical efficacy<sup>9, 10</sup>. This study compared routine nursing and continuing nursing to understand the effect of continuing nursing on self-care ability and nursing satisfaction of patients with RC undergoing colostomy.

## MATERIALS AND METHODS

### General Data

A total of 130 patients undergoing resection of RC who were diagnosed and treated in our hospital from April 2018 to May 2019 were enrolled. Among them, 62 patients nursed under the routine nursing mode for advanced RC were assigned to Group A, and other 68 patients nursed under continuing nursing mode based on the routine nursing for patients undergoing resection of RC were assigned to Group B. Group A consisted of 40 males and 22 females, with an average age of  $(57.30 \pm 6.20)$  years and average course of disease of  $(5.30 \pm 1.30)$  years, while Group B consisted of 48 males and 20 females, with an average age of  $(58.30 \pm 6.14)$  years and average course of disease of  $(5.27 \pm 1.10)$  years. The inclusion and exclusion criteria of the study: Patients diagnosed as RC based on clinical, imaging, and pathological examination for the first time and patients with indications for resection of RC were enrolled<sup>11</sup>, and patients

with other complications or conscious, cognitive or other mental disorders were excluded. The patients and their family members were informed of the study before carrying out of the study, and the study was approved by the Ethics Committee of our hospital.

### Nursing Methods

Patients in Group A were given routine nursing for cancer operation, including unified health education, application of developed diet plan, psychological intervention, and implementation of relevant doctor's advice after routine operation. Patients in Group B were emphatically given continuing nursing based on nursing to Group A. 1. Written instruction: Relevant professional medical personnel were arranged to compile nursing-related brochures, life record form, and outpatient follow-up form, record information about diet, daily schedule, and health protection of each patient during hospitalization, and instruct the patients in completing outpatient revisit on time with their life record forms.

(2) Establishment of mutual-aid teams: Five-to-six-person mutual-aid teams were set up in a unified way. The leader of each team was held by the patient with the best psychological and physical status in the team. Each leader played the role of lifting the confidence of other team members in active and healthy life and took the lead to share self-care experience to enhance the nursing of teams and the communication between patients.

(3) Regular telephone/door-to-door follow-up: Each patient was weekly followed up by telephone on every Saturday during the first month after discharge, and then followed up by telephone once every two weeks during the second month after discharge. According to the feedback obtained through follow-up, guidance was provided for patients to help them address nursing problems and form correct living behaviors. In addition, staff were arranged to regularly send guidance knowledge on health care, diet, and exercise to related patients and their families through the WeChat platform.

(4) Outpatient intervention of stoma: Doctors

in relevant departments were required to understand the status and handing of stoma of each patient according to the information obtained from the patients' revisit every week. Each patient was provided with guidance for diagnosis and treatment of complications according to his/her actual physical condition, and the priority of follow-up was determined according to the doctor's advice, so as to ensure that each patient receive standardized continuing nursing.

### Outcome Measures

The two groups were compared in mental health and emotional state before and after nursing care during hospitalization and after 2 months of follow-up visit. In terms of mental health, the anxiety and depression of both groups were scored and evaluated using the self-rating depression scale (SDS) and the self-rating anxiety scale (SAS)<sup>12,13</sup>. The life quality of Group A and Group B was compared in four dimensions of physical health, mental health, material life, and social function using the quality of life scale (QOL-C30)<sup>14</sup>, and the score was proportional to life quality. In addition, the compliance of the two groups was also compared, and the self-care ability of them was compared and evaluated using the exercise of self-care agency scale (ESCA) in

dimensions of awareness of health knowledge, self-cognition in self-concept, self-care skills, and self-responsibility<sup>15</sup>. Scores of all dimensions were directly proportional to self-care ability. Moreover, the two groups were compared in nursing satisfaction and status on discharge, including the status during the periods of 10 d-15 d, 16 d-21 d, and 22 d-30 d. The two groups were also compared in complications including stoma mucosa bleeding, skin eczema, stoma edema, stoma prolapsed, and fecal dermatitis.

### STATISTICAL ANALYSES

The data were analyzed statistically using SPSS19.0 (Asia Analytics Formerly SPSS China). Enumeration data were expressed as the [n(%)], compared between groups using the  $\chi^2$ . Quantitative data were expressed as the ( $\bar{X} \pm S$ ), and compared within groups before and after nursing care using the paired t test, and between groups using the independent-samples T test.  $P < 0.05$  indicates a significant difference.

### RESULTS

#### Baseline Data of Groups A and B

There was no notable difference between the two groups in baseline data such as age and sex (all  $P > 0.05$ ). Table 1.

Table 1.  
General data of the two groups

Group	Group A (n=62)	Group B (n=68)	t/X <sup>2</sup>	P-value
Age (Y)	57.30±6.20	58.30±6.14	0.923	0.358
Sex			0.547	0.460
Male	40 (64.52)	48 (70.59)		
Female	22 (35.48)	20 (29.41)		
Average course of disease (months)	5.30±1.30	5.27±1.10	0.142	0.887
Education level			1.428	0.232
Undergraduate or with higher degree	21 (33.87)	30 (44.12)		
Below undergraduate	41 (66.13)	38 (55.88)		
Smoking history			0.208	0.648
Yes	38 (61.29)	39 (57.35)		
No	24 (38.71)	29 (42.65)		
Drinking history			0.324	0.569
Yes	27 (43.55)	33 (48.53)		
No	35 (56.45)	35 (51.47)		
Hypertension			0.000	0.977
Yes	19 (30.65)	21 (30.88)		
No	43 (69.35)	47 (69.12)		

Tissue-based classification			0.139	0.933
Adenocarcinoma	20 (32.26)	24 (52.17)		
Adenosquamous carcinoma	28 (45.16)	29 (31.52)		
Undifferentiated carcinoma	14 (22.58)	15 (16.30)		
Pathological classification			1.659	0.436
Ulcerative type	19 (30.64)	28 (41.18)		
Mass type	23 (37.10)	20 (29.41)		
Infiltration type	20 (32.26)	20 (29.41)		
Clinical staging			0.581	0.446
Stage I / II	18 (29.03)	24 (35.29)		
Stage III /IV	44 (70.97)	44 (64.71)		
Lymph node metastasis			0.044	0.834
Yes	19 (30.65)	22 (32.35)		
No	43 (69.35)	46 (67.65)		

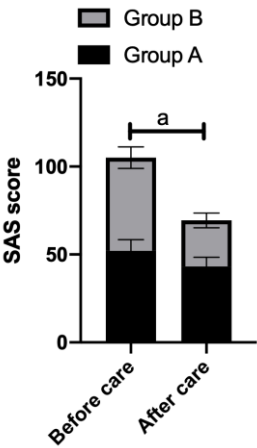
Scores of Psychological Quality of Groups A and B before and after Nursing Care

(1) Emotional state

Changes in SAS scores of Groups A and B before and after nursing care.

After nursing care, SAS scores of both groups decreased notably (both  $P<0.001$ ), and the SAS score of Group B was notably lower than that of Group A ( $P<0.001$ ). Figure 1.

Figure 1.  
Changes in SAS scores of Groups A and B before and after nursing care



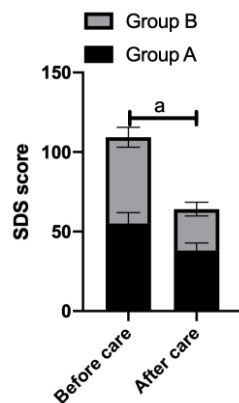
Note: a indicates that after nursing care, the SAS score of both groups decreased notably ( $P<0.001$ ); a indicates that after nursing care, the SAS score of Group B was notably lower than that of Group A ( $P<0.001$ ).

(2) Changes in SDS scores of Groups A and B before and after nursing care

After nursing care, SDS scores of both groups

decreased notably ( $P<0.001$ ), and the SDS score of Group B was notably lower than that of Group A ( $P<0.001$ ). Figure 2.

Figure 2.  
Changes in SDS scores of Groups A and B before and after nursing care



Note: a indicates that after nursing care, the SDS score of both groups decreased notably ( $P<0.001$ ); a indicates that after nursing care, the SDS score of Group B was notably lower than that of Group A ( $P<0.001$ ).

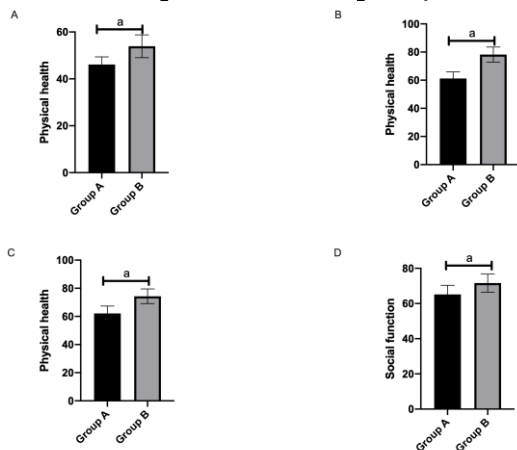
(3) Compliance of Groups A and B  
Group B showed notably better compliance than Group A, and Group B had more patients with complete compliance ( $P<0.001$ ). Table 2.

Table 2.  
Compliance

Group	Group A (n=62)	Group B (n=68)	X2	P-value
Complete compliance	21 (33.87)	55 (80.89)	29.510	<0.001
Partial compliance	26 (41.94)	13 (19.11)	8.041	0.005
Non-compliance	15 (24.19)	0 (0.00)	18.600	<0.001

Scores of Self-Care Ability of Groups A and B  
(1) Comparison of life quality between Groups A and B  
Comparison of life quality between Groups A and B showed that QOL-C30 scores of Group B were notably higher than those of Group A in physical health, mental health, material life, and social function (all  $P<0.001$ ). Figure 3.

Figure 3.  
Comparison of life quality



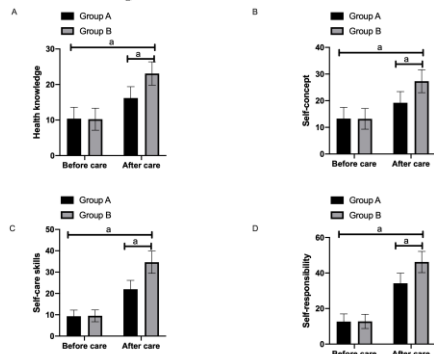
Note: a indicates that the physical health, mental health, material life, and social function scores of Group B were significantly higher than those of Group A (all  $P<0.001$ ).

(2) ESCA score

Before nursing care, Groups A and B were not significantly different in the scores of awareness of health knowledge, self-cognition in self-concept, self-care skills, and self-responsibility (all  $P>0.05$ ),

while after nursing care, the scores of these dimensions of both groups increased greatly ( $P<0.001$ ), and these scores of Group B were all notably higher than those of Group A ( $P<0.001$ ). Figure 4.

Figure 4. ESCA score



Awareness of health knowledge (A). Self-cognition in self-concept (B). Self-care skills (C). Self-responsibility (D). a indicates  $P<0.001$ .

(3) Nursing satisfaction

Group B expressed greatly higher overall

nursing satisfaction than Group A ( $P<0.05$ ). Table 3.

Table 3. Nursing satisfaction of Groups A and B

Group	Group A (n=62)	Group B (n=68)	X2	P-value
Highly satisfied	10 (16.13)	30 (44.12)	-	-
Satisfied	12 (19.35)	25 (36.76)	-	-
Moderately satisfied	23 (37.10)	10 (14.71)	-	-
Dissatisfied	17 (27.42)	3 (4.41)	-	-
Overall satisfaction	45 (72.58)	65 (95.59)	64.710	<0.001

Hospitalization and Complications

Hospitalization of Groups A and B

(1) Hospitalization time experienced by Groups A and B

Group B experienced shorter hospitalization

than Group A, but there was no notable difference between the two groups during the periods of 10 d-15 d, 16 d-21 d and 22 d-30 d (all  $P>0.05$ ). Table 4.

Table 4.  
Hospitalization time

Group	Group A (n=62)	Group B (n=68)	X2	P-value
10d-15d	34 (54.84)	48 (70.59)	3.454	0.063
16d-21d	18 (29.03)	14 (20.59)	1.246	0.264
22d-30d	10 (16.12)	6 (8.82)	1.604	0.205

(2) Complications in Groups A and B

After nursing care, the incidence of

complications in Group B was notably lower than that in group A ( $P<0.05$ ). Table 5.

**Table 5.**  
**Complications in Groups A and B**

Group	Group A (n=62)	Group B (n=68)	X <sup>2</sup>	P-value
Stoma mucosa bleeding	5 (8.06)	1 (1.47)	-	-
Skin eczema	10 (16.13)	4 (5.88)	-	-
Stoma edema	7 (11.29)	3 (4.41)	-	-
Stoma prolapse	5 (8.06)	2 (2.94)	-	-
Fecal dermatitis.	6 (9.68)	2 (2.94)	-	-
The total incidence	33 (53.23)	12 (17.65)	18.140	<0.001

## DISCUSSION

RC is caused by intestinal mucosal hyperplasia due to chronic inflammation or long-term stimulation of rectal polyps. Many patients with the cancer are already at the advanced or middle stage at the time of diagnosis, and they are usually treated by surgery in clinical practice<sup>16, 17</sup>. Statistics show that patients with RC face an incidence of complications as high as 62% after colostomy. Patients undergoing colostomy are required to wear ostomy bags for the collection of feces for a long time, and their physiological defecation mode is changed, so they may have negative emotion, and improper nursing will compromise their postoperative recovery, and increase the treatment burden<sup>18, 19</sup>. Therefore, consistently optimizing the nursing plan for patients with RC is pivotal for improving their prognosis. This study performed continuing nursing on patients based on routine nursing for patients with RC after colostomy to seek for better nursing mode.

In the present study, we evaluated the psychological state and compliance of patients with RC undergoing colostomy before and after nursing care, and found that after the two kinds of nursing care, the SAS and SDS scores of patients declined greatly, and the decline in patients nursed under continuing nursing mode was more significant. Patients with RC after colostomy are more prone to negative psychological state such as anxiety and depression due to the particularity of colostomy<sup>20, 21</sup>. Therefore, psychological intervention for patients with RC undergoing colostomy is helpful to reduce their negative emotions. Relevant studies

suggest that consistently paying attention to the psychological state of patients during hospitalization and returning visit is more conducive to the comprehensive psychological and physical recovery of patients and improvement of their life quality<sup>22, 23</sup>. Therefore, we believe that continuing nursing based on routine nursing can effectively alleviate the anxiety symptoms of patients with RC after colostomy.

We compared the two groups in self-care ability and life quality, finding that patients nursed under the continuing nursing mode based on routine nursing got better QOL-C30 scores in physical health, mental health, material life, and social function, and had better awareness of health knowledge related to nursing for RC and stoma, and better self-care ability and self-responsibility than those nursed under routine nursing mode. Continuing visiting to patients outside the hospital can help intuitively understand the maintenance and nursing of patients' stoma<sup>24</sup>. Under the continuing nursing mode, returning visits and relevant nursing guidance are adopted to directly provide corresponding solutions, and the patients are taught in nursing methods, which can greatly enhance the self-care ability of patients with stoma<sup>25, 26</sup>. Therefore, we believe that continuing nursing intervention for patients undergoing resection of RC is more valuable than routine nursing for patients with RC in improving patients' life quality in all aspects. Moreover, patients with stoma were more satisfied with continuing nursing than routine nursing overall.

Finally, we compared the total hospitalization time and complications between the two groups.

It was found that patients with stoma nursed under continuing nursing mode experienced shorter hospitalization and suffered from less stoma mucosa bleeding, skin eczema, stoma edema, stoma prolapse, and fecal dermatitis than those nursed under routine nursing. Therefore, we believe that for patients with RC undergoing colostomy, continuing nursing based on routine nursing can prevent adverse prognosis such as stoma bleeding, edema, prolapse and dermatitis, and can effectively reduce the incidence of inflammation and necrosis around stoma and thus ensure good prognosis after operation. In recent years, clinical studies have also confirmed that continuing nursing has been extended to out-of-hospital nursing from in-hospital nursing, and it improves patients' standardized nursing and related nursing knowledge, with systematic continuing nursing measures, and thus provides certain guarantee for patients' prognosis<sup>27, 28</sup>.

In this study, there are still some limitations. For example, we have not analyzed other biochemical indicators of patients, and the nursing plan formulated this time may not be suitable for other regions due to local medical level differences. In addition, the follow-up time is too short. In view of these defects, we will continue to pay attention to the latest relevant research results in the later period and regularly review the prognosis of patients included in the study, so as to continuously improve the study.

To sum up, continuing nursing can provide better results of improving the emotion and life quality of patients undergoing resection of RC based on routine nursing, and it can reduce the occurrence of postoperative complications on such patients to a certain extent.

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