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Effect of nutritional care combined with psychological intervention on nutritional status, psychological state and quality of life in patients with ulcerative colitis and cancer

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Abstract: Objective: To investigate the effects of nutritional nursing combined with psychological support on nutritional status, mental health and quality of life in patients with ulcerative colitis and cancer. **Methods:** A series of 80 cases of ulcerative colitis complicated by radiation were then standardized into laboratory and test arms, with 40 patients in each group. The parallel set was provided with standard dietary management and health education, while the experimental group, in addition to pharmacological treatment and comprehensive risk assessment, also received specialized psychological support. Nutritional status was evaluated by indicators such as hemoglobin, total protein, serum albumin, prealbumin, and transferrin. Mental health was assessed using the self-rating anxiety scale and self-rating depression scale, and quality of life was evaluated with the SF-36 scale. Moreover, the systemic inflammation levels and adverse reactions of both groups were observed. **Results:** Post-treatment, the experimental group displayed increased levels of serum albumin, prealbumin, and transferrin in comparison to the parallel set. Furthermore, the self-assessment scores for the laboratory group for anatomy and hypertension decreased significantly from baseline and were lower than the scores of the parallel set. In terms of life quality, changes were observed in various dimensions for both groups post-intervention, with some differences noted between the experimental and control groups. The trial arm had lower levels of serum inflammatory markers and a lower occurrence of dysfunction over the parallel ones. **Conclusion:** Integrating nutritional care with psychological intervention can efficiently enhance the nutritional condition of patients suffering from ulcerative colitis and cancer. It helps relieve negative psychological states, decrease the levels of serum inflammatory factors, lower the incidence of adverse reactions, and, to some degree, improve patients' quality of life.

Keywords: nutritional care; psychological intervention; ulcerative colitis; quality of life; psychological state

1. Introduction

Ulcerative colitis (UC) refers to a persistent, non-specific inflammatory condition affecting the intestines. Its cause remains unknown, and it predominantly impacts the rectum and colon. Clinically, it is characterized by ongoing or recurring diarrhea, stools containing mucus, pus, and blood, as well as abdominal pain [1]. Long-term intestinal inflammation not only affects the patient's digestive and absorption functions, leading to nutrient loss, but also causes great inconvenience to the patient's daily life. Cancer, as a major disease that seriously threatens human health, consumes a large amount of nutrients during the course of the disease. At the same time, treatment methods such as surgery, radiotherapy, and chemotherapy can also cause adverse reactions from nausea, emesis, and appetite deprivation, further aggravating

the nutritional burden on the patient [2]. Based on relevant statistics, the prevalence of malnutrition among UC patients reaches as high as 60%, while that among cancer patients lies in the range of 40%–80%.

For cancer patients, in addition to the large amount of nutrients consumed by tumor cells, the impact of surgery, radiotherapy and chemotherapy is more complex. Surgical trauma can stress the body and increase nutritional needs; chemoradiotherapy is likely to cause nausea, vomiting, taste changes and other adverse reactions, resulting in serious loss of appetite and insufficient nutritional intake in patients. At the same time, chemoradiotherapy may also damage the intestinal mucosal barrier and affect the absorption of nutrients. On the psychological side, cancer patients face not only the threat of the disease itself, but also the physical discomfort of treatment, financial stress, and fear of uncertainty about the future. These factors make cancer patients face great challenges in terms of nutrition and psychology, seriously affecting their quality of life and treatment effectiveness. According to statistics, the incidence of malnutrition in patients with different types of cancer is between 40% and 80%, and the incidence of psychological problems is also high. This study will focus on patients with ulcerative colitis and cancer, and explore the impact of nutritional care combined with psychological intervention on this special patient group.

Malnutrition can weaken the patient's immunity, delay wound healing, increase the risk of infection, prolong hospitalization, reduce the quality of life, and even affect the patient's prognosis. At the same time, patients with these two types of diseases often suffer from tremendous psychological pressure. Due to the recurrence of the disease and the difficulty in curing it, UC patients suffer from long-term pain and are prone to negative emotions such as anxiety and depression; cancer patients have a heavier psychological burden due to fear of the disease, concerns about the treatment effect, and social and family pressure. Psychological problems not only diminish patients' quality of living, but can also affect disease development and treatment outcomes through the neuroendocrine-immune regulatory system. Research has demonstrated [2,3] that the recurrence rate of patients in poor mental condition is 30%–50% higher than those in good mental condition.

In clinical treatment, drug therapy is crucial. However, the significance of nutritional care and psychological intervention should not be overlooked. Appropriate nutritional support can boost patients' nutritional status, strengthen the body's immunity, and lay a material foundation for disease treatment and rehabilitation. Effective psychological intervention can alleviate patients' negative emotions, enhance their psychological adaptability to cope with the disease, and promote their physical and mental well-being [4,5]. Nevertheless, in current clinical practice, the care for UC and cancer patients usually emphasizes disease treatment itself, with insufficient attention given to nutritional and psychological aspects. Focus on nutritional and mental health is insufficient. Moreover, there's a shortage of organized and all-encompassing treatment strategies.

The objective of this research is to examine how the combination of nutritional support and psychological counseling affects the nutritional condition, mental state, and life quality of individuals with ulcerative colitis and cancer. By conducting nutritional risk assessments and management, along with specialized psychological interventions, changes in patients' nutritional metrics, mental health scores, life quality

ratings, and serum inflammatory markers are monitored to evaluate the efficacy and safety of this integrated approach. It is expected that this study can offer a scientific basis for clinical nursing work, facilitate the optimization of nursing models for UC and cancer patients, improve patients' prognosis, and enhance their quality of life.

2. Materials and methods

2.1. General information

A total of eighty individuals diagnosed with both ulcerative colitis and cancer, who visited our hospital from September 2023 to January 2025, were enrolled as participants in this study. Diagnostic criteria for the diseases followed the classification standards established by the World Health Organization (WHO) and adhered to national guidelines for diagnosis and treatment. Ulcerative colitis and cancer were identified using a holistic approach that incorporated clinical manifestations, laboratory analyses (including blood tests and fecal assessments), imaging studies (such as colonoscopy, CT, and MRI), and pathological biopsies. Patients with ulcerative colitis were required to exhibit characteristic symptoms. For ulcerative colitis patients, they must present typical symptoms like persistent or recurrent diarrhea, mucus and blood in the stool, and abdominal pain, accompanied by inflammatory manifestations in the intestinal mucosa shown in colonoscopy and pathological biopsy results. Colonoscopy and biopsy outcomes are required. Cancer patients must have a definitive histopathological diagnosis of the tumor, with a clear classification and staging. The inclusion criteria are as follows: (1) The relevant diagnostic criteria for ulcerative colitis and cancer were met simultaneously; (2) be between the ages of 18 and 75; (3) possess the capacity to understand and participate in various assessments and treatments; (4) have provided informed consent along with their families. The exclusion criteria are: (1) Individuals with significant impairment of vital organs such as the heart, liver, or kidneys; (2) those with a history of psychiatric disorders or cognitive issues that prevent cooperation with psychological interventions; (3) patients who have recently undergone extensive psychological therapy or been part of other clinical studies. The 80 participants were randomly divided into an experimental group and a control group, with 40 individuals in each.

2.2. Methods

The experimental and control groups both received probiotics, 5-aminosalicylic acid drugs, and nutritional supplements via enteral feeding. For The parallel set, conventional diet management was implemented. According to the test results of albumin and prealbumin, a scientific nutrition matching plan can be provided for patients according to the normal diet. People who cannot drink normally can use enteral nutrition preparations. At the same time, health education should be provided to patients, and they should be told about dietary precautions and dietary principles. The observation group was screened for nutritional risks and managed according to the nutritional risks. The specific contents are as follows:

Psychological interventions:

The observation group, an experienced professional psychologist provided

regular cognitive behavioral therapy (CBT) for patients. The psychologist has the national second-level psychological counseling teacher quality, has more than 10 years of work experience in the field of clinical psychotherapy, and long-term focus on the psychological intervention of patients with tumors and chronic diseases. During the patient's hospitalization, the first psychological intervention treatment was provided to the patient in the form of a specialist consultation. During the consultation, the psychologist had in-depth direct in-person communication with the patient to fully understand the patient's psychological state, disease cognition, life background and other information, providing a basis for the subsequent formulation of a personalized psychological treatment plan. Therapy regimen. Once discharged, the patient was recommended to attend regular weekly sessions at the Psychology Department's outpatient clinic for mental health treatment. The entire intervention cycle was set for 20 weeks, once a week, and each treatment lasted 60 min. Cognitive behavioral therapy mainly includes the following six stages: (1) Participation and evaluation stage: The core goal of this stage is to establish a trusting and stable therapeutic relationship with the patient. The psychologist uses professional skills such as active listening and empathy to make the patient feel understood and respected, so that he is willing to open his heart and share his inner feelings and confusion. At the same time, a comprehensive and detailed assessment of the patient's current psychological state, cognitive model and behavioral approach to coping with the disease is conducted to provide an accurate basis for the formulation of subsequent recommendations. (2) Cognitive and behavioral coping strategy stage: In this stage, the psychologist and the patient conduct an in-depth analysis and evaluation of the current symptoms that cause the candidate's pain and the figure of the esteem of the critical mass of the entity's efforts. By guiding the patient to recall specific events and situations, the psychologist helps the patient identify cognitive biases that cause negative emotions and behaviors, uses cognitive reconstruction technology to correct these cognitive biases, such as excessive worry about the deterioration of the disease and unreasonable expectations of the therapeutic effect. In parallel, the psychologist discusses and develops effective coping strategies with the patient, uses behavioral coping strategies, and teaches the patient some relaxation techniques and emotional regulation methods, such as deep breathing training and progressive muscle relaxation training, to relieve the patient's tension and anxiety. (3) Re-understanding of psychological state stage: Help patients re-understand the causes and mechanisms of psychological states such as anxiety and depression. Psychologists use their professional knowledge and psychoeducational techniques to explain to patients in an easy-to-understand way that these negative emotions are not a manifestation of personal weakness, but a normal psychological reaction when facing the pressure of the disease. By changing the patient's cognition of their own emotions, the patient's self-blame and guilt are reduced, and their confidence in coping with negative emotions is enhanced. (4) Identification and change of adverse mental states: For patients with symptoms such as delusions and hallucinations, psychologists help patients identify these painful and disabling adverse mental states through careful observation and in-depth communication with patients, and guide patients to analyze the root causes of these symptoms. Then, cognitive behavior correction techniques are used, such as challenging and reshaping patients' wrong cognition, and correcting abnormal behaviors to help patients change these

adverse mental states and return to normal cognitive and behavioral patterns. (5) Dealing with negative self-evaluation, anxiety and depression: Guide patients to focus on their negative self-evaluations, such as “I am useless” and “I can’t be cured”. Analyze the irrationality of these self-evaluations with patients to help patients establish positive self-cognition. At the same time, use cognitive behavioral therapy techniques, such as by guiding patients to identify and challenge negative self-perception, cognitive reconstruction and exposure therapy, to further relieve patients’ anxiety and depression and improve their mental state. (6) Management of relapse risk and social barriers: At the end of treatment, discuss with patients the possibility of relapse and possible risk factors, and help patients develop corresponding preventive measures and coping plans. Simultaneously, concerns about sufferers’ social disorders are addressed, and role-playing and social skills training are used to help patients improve their social skills, interpersonal relationships, social adaptability and quality of life. Four weeks following the conclusion of psychotherapy, the conditions and psychological states of the two patient groups were re-evaluated. This was done to investigate the effectiveness of a mental interview in the treatment of ulcerative colitis (UC).

Nutritional care:

(1) Nutritional evaluation: Once the patient is hospitalized, medical personnel will promptly carry out a holistic evaluation of the patient’s nomination profile. The assessment items involve anthropometric indices, biochemical indices, and clinical examinations. At the same time, serum-specific IgG antibody tests are performed simultaneously to clarify the patient’s tolerance to various types of food. Based on the results of the above tests, the medical staff will comprehensively evaluate the patient’s nutritional status and develop a highly individualized nutritional supplement plan for each patient to ensure the accuracy and effectiveness of nutritional supplementation; (2) dietary education: In order to improve patients’ awareness of the importance of nutritional support, medical staff use a one-to-one approach to provide healthy diet education for patients. During the education process, medical staff will use easy-to-understand language, combined with pictures, videos and other forms, to explain to patients in detail the key role of dietetic supplements in the rehabilitation to illness. For example, the medical staff will explain to the patient that adequate nutritional intake can enhance the body’s immunity, help fight disease, promote tissue repair, and promote wound healing; they will also introduce the specific effects of different nutrients on the body, such as protein being an important substance for body repair and maintenance of normal physiological functions, vitamins and minerals being involved in various metabolic processes of the body, etc. At the same time, the medical staff will inform the patient of the precautions related to diet, including food selection, cooking methods, dietary taboos, etc., to help the patient develop healthy eating habits; (3) dietary guidance and diet diary: According to the individualized nutritional supplement plan, the medical staff will make the detailed diet plan public to the patient and his family to ensure that they have a clear understanding of the daily diet arrangement. The diet plan clearly stipulates the type of food, intake and matching method of each meal, mainly high-calorie, high-protein, low-fat, and high-vitamin foods. For example, it is recommended that patients eat more lean meat, fish, eggs, dairy products, fresh vegetables and fruits, and avoid spicy, irritating and allergic foods

to prevent increasing the intestinal burden or triggering allergic reactions, affecting the recovery of the disease. In order to better monitor the patient's diet, the healthcare provider will instruct the victim and his/her family to create a dietary diary. Patients or their families need to record in detail the types of food they consume every day, the amount, the time of eating, and the physical reactions after eating. Medical staff will regularly check the diet diary, adjust and guide the catering of affected individuals on the basis of the records, and help the patients to achieve a rational diet in the long term; (4) continuity guidance: Strengthening continuity care is an important part of ensuring the effectiveness of the patient's outpatient nutrition management. Medical staff will follow up regularly to understand the patient's diet and disease recovery after discharge. Follow-up methods include telephone follow-up, WeChat follow-up, outpatient follow-up, etc. The frequency of follow-up depends on the patient's specific situation, generally once a week or every two weeks. During the follow-up process, medical staff will carefully inquire about the patient's diet, such as whether they eat according to the diet plan, whether they have any diet-related discomfort symptoms, etc.; at the same time, understand the patient's disease recovery progress, such as whether the symptoms have been relieved, whether the physical strength has been restored, etc. Medical staff will provide timely guidance and correction for the patient's shortcomings in daily life. For example, if it is found that the patient fails to strictly control fat intake in the diet, the medical staff will reiterate the importance of a low-fat diet and give specific dietary advice; if the patient fails to eat on time due to busy work or other reasons, the medical staff will help the patient develop a reasonable meal schedule and continue to improve the patient's awareness of healthy eating.

2.3. Observational metrics

2.3.1. Basic information

Comprehensive details of both patient groups, such as gender, age, and Body Mass Index (BMI), were meticulously collected and recorded.

2.3.2. Nutritional status

Peripheral intravenous serum samples were collected from the participants in the early market hours during fasting before and after the intervention. The collected blood was centrifuged to obtain serum samples for the detection of a number of key nutritional indicators, including hemoglobin (Hb), total protein (TP), serum albumin (ALB), prealbumin (PA) and transferrin (TRF). These indicators reflect the nutritional level of patients from different perspectives. For example, hemoglobin reflects the body's oxygen-carrying capacity and is closely related to nutritional status; serum albumin, prealbumin and transferrin are important indicators for assessing protein nutritional status. During the test, serum albumin (ALB) was determined by the chromogenic reaction produced by the specific binding of bromocresol green to ALB and by the shade of the color. Prealbumin (PA) and transferrin (TRF) were detected by immunoturbidimetry, which uses antigen-antibody reaction to form a complex whose turbidity is proportional to the content of the substance to be tested, thereby achieving quantitative analysis.

2.3.3. Psychological state

The Self-Rating Anxiety Scale (SAS) [4] and the Self-Rating Depression Scale

(SDS) [5] were used to conduct a comprehensive assessment of the psychological state of the two groups of patients before and after treatment. The SAS and SDS each contain 20 items, using a 4-level scoring system, with scores ranging from 1 to 4 points from “never or rarely” to “most or all of the time”. According to the scoring criteria, a SAS score ≥ 60 points is considered moderate to severe anxiety, and an SDS score ≥ 60 points indicates moderate to severe depression. A higher score on these scales indicates more severe anxiety or depression in patients, signifying a poorer psychological condition [6]. Through contrasting the score alterations before and after treatment, one can directly perceive the impact of psychological intervention on enhancing the patient’s psychological state.

2.3.4. Quality of life

The simplified SF-36 scale was used to evaluate patients’ quality of life before and after the intervention [7]. This scale encompasses four aspects: physical function, role-physical function, emotional health, and social function. Each domain has a maximum score of 100. A higher score suggests a better quality of life in that domain. By analyzing the scores of each dimension at different time points, it is possible to comprehensively assess the combined impact of nutritional care and psychological intervention on patients’ quality of life.

2.3.5 Serum inflammatory factors

The focus for ulcerative colitis patients is on assessing the levels of inflammatory markers in serum, including tumor necrosis factor-alpha (TNF- α), interleukin-1 beta (IL-1 β), and matrix metalloproteinase-1 (MMP-1).

2.3.6 Adverse reactions

The undesirable responses of the participants in both groups during the treatment and intervention were closely scrutinized and recorded in detail, which mainly included symptoms such as nausea and vomiting, dizziness, headache, and accelerated heart rate.

2.4. Statistical methods

This study employed SPSS 25.0 statistical software to systematically analyze the collected data. During the data processing, quantitative data, including patients’ age, nutritional index levels, psychological scale scores, and quality-of-life scale scores, were presented in the form of “mean $\pm$ standard deviation ($\bar{x} \pm s$)”. The *t*-test was utilized to determine if there was a significant difference between the two groups of data. The *t*-test is an efficient approach for analyzing the mean difference between two data groups, facilitating the evaluation of how intervention measures affect these quantitative indicators. For count data, it was described using the number of cases and percentages, and the chi-square test (χ^2 test) was used for statistical analysis. The significance level was set at ($\alpha = 0.05$). In other words, if the level is not reached, the difference is not statistically significant.

3. Results

3.1. A comparative study of average information of the two groups of patients

The same general data of the respective groups did not differ markedly ($p > 0.05$) and were of comparability as shown in **Table 1**.

Table 1. Comparison of general information of the two groups of patients.

Project	Observation group ($n = 40$)	Control group ($n = 40$)	Statistics	P -value
Gender [cases (%)]			0.546	0.543
Male	15 (37.50)	17 (42.50)		
Female	25 (62.50)	23 (63.50)		
Average age (years)	60.12 $\pm$ 5.45	58.63 $\pm$ 5.11	1.261	0.211
BMI (kg/m ² , $\bar{x} \pm s$)	23.02 $\pm$ 1.33	23.45 $\pm$ 1.39	1.414	0.161

3.2. Comparison of nutritional status indicators between the two groups

Prior to treatment, no significant differences were observed in the levels of hemoglobin (Hb), total protein (Tp), albumin (ALB), prealbumin (PA), and transferrin (TRF) between the two groups ($P > 0.05$). Following treatment, these nutritional indicators increased in both groups compared to baseline, with the experimental group showing superior results over the parallel set ($P < 0.05$). Refer to **Table 2** for details.

Table 2. Comparison of nutritional status indicators between the two groups of patients before and after treatment ($\bar{x} \pm s$).

	Hemoglobin (Hb)	Total protein (TP)	Serum albumin (ALB)	Prealbumin (PA)	Transferrin (TRF)
Before intervention					
Observation group ($n = 40$)	116.22 $\pm$ 16.81	63.67 $\pm$ 4.19	30.84 $\pm$ 6.91	214.24 $\pm$ 51.36	1.54 $\pm$ 0.57
Control group ($n = 40$)	114.13 $\pm$ 15.51	62.52 $\pm$ 3.96	30.76 $\pm$ 0.26	204.02 $\pm$ 61.81	1.64 $\pm$ 0.32
t	0.578	1.262	0.073	0.804	0.968
P -value	0.565	0.211	0.942	0.424	0.336
After intervention					
Observation group ($n = 40$)	125.66 $\pm$ 11.13	67.68 $\pm$ 3.84	35.08 $\pm$ 2.81	374.52 $\pm$ 124.12	2.15 $\pm$ 0.16
Control group ($n = 40$)	117.79 $\pm$ 13.59	63.39 $\pm$ 2.81	31.49 $\pm$ 1.36	195.62 $\pm$ 61.87	2.81 $\pm$ 0.47
t	2.834	5.402	7.273	8.158	8.407
P -value	0.006	< 0.05	< 0.05	< 0.05	< 0.05

3.3. Comparison of psychological states before and after the intervention

Following the intervention, the parallel set experienced a slight reduction in SAS and SDS scores, with no significant change from baseline levels ($P > 0.05$). Detailed results are outlined in **Table 3**.

Table 3. Comparison of psychological status between the two groups of patients.

Group	SAS Scoring		SDS score	
	Before intervention	After intervention	Before intervention	After intervention
Observation group ($n = 40$)	57.32 ± 2.81	41.51 ± 2.71	54.59 ± 1.92	39.59 ± 1.05
Control group ($n = 40$)	56.14 ± 2.38	53.1 ± 2.67	54.89 ± 1.27	54.05 ± 1.03
t	2.027	19.268	0.824	62.177
P -value	0.046	< 0.05	0.412	< 0.05

3.4. Comparison of quality of life between the two groups

After intervention, the difference between the two groups was statistically significant ($P < 0.05$), as shown in **Table 4**.

Table 4. Comparison of quality of life scores ($\bar{x} \pm s$; points).

Group	Daily life	Mental health	Physical function	Social function
Before intervention				
Observation group ($n = 40$)	71.18 ± 4.26	72.74 ± 4.46	67.42 ± 4.74	70.89 ± 5.72
Control group ($n = 40$)	71.64 ± 4.04	72.73 ± 4.53	67.77 ± 4.64	70.12 ± 5.53
t	0.496	0.01	0.334	0.612
P -value	0.622	0.992	0.739	0.542
After intervention				
Observation group ($n = 40$)	78.44 ± 5.45	79.81 ± 5.14	74.99 ± 5.88	78.04 ± 5.52
Control group ($n = 40$)	84.54 ± 5.89	84.44 ± 5.51	81.71 ± 5.51	86.42 ± 5.71
t	4.808	3.886	5.274	6.673
P -value	< 0.05	0.0002	< 0.05	< 0.05

3.5. Serum inflammation

After treatment, the levels of these serum inflammatory markers in the observation group decreased significantly compared to those in the parallel set, and the difference was statistically significant ($P < 0.05$). Specific data can be found in **Table 5**.

Table 5. Comparison of serum inflammatory indexes between the two groups before and after intervention [$\bar{x} \pm s$].

Project	MMP-1 ($\mu\text{g/L}$)	IL-1 β ($\mu\text{g/L}$)	TNF- α (ng/L)
Before intervention			
Observation group ($n = 40$)	1.22 ± 0.81	0.84 ± 0.91	3.34 ± 0.57
Control group ($n = 40$)	1.13 ± 0.51	0.76 ± 0.26	3.64 ± 0.32
t	0.616	0.631	0.841
P -value	0.512	0.579	0.125
After intervention			
Observation group ($n = 40$)	0.66 ± 1.1	0.08 ± 1.81	20.15 ± 1.16
Control group ($n = 40$)	1.79 ± 1.59	0.49 ± 1.36	27.81 ± 1.47

Table 5. (Continued).

Project	MMP-1 (µg/L)	IL-1β (µg/L)	TNF-α (ng/L)
<i>T</i>	6.572	5.689	9.861
<i>P</i> -value	0.035	0.043	0.014

3.6. Adverse reactions

A significant difference in the occurrence of adverse reactions was noted between the two groups ($P < 0.05$), as detailed in **Table 6**.

Table 6. Comparison of adverse reactions between the two groups [n (%)].

Group	Nausea and vomiting	Dizziness	Headache	Increased heart rate	Total occurrence
Observation group ($n = 40$)	1 (2.25)	0	0	1 (2.25)	2 (5.00)
Control group ($n = 40$)	2 (5.00)	1 (2.25)	1 (2.25)	3 (7.50)	5 (17.50)
χ^2					4.524
<i>P</i> -value					0.032

4. Discussions

Ulcerative colitis (UC) represents a type of chronic and non-specific inflammatory disorder of the intestine. Its principal manifestations include diarrhea, stools containing mucus, pus, and blood, along with abdominal pain. Long-term intestinal inflammation interferes with the patient's digestive and absorption functions, resulting in nutrient loss [6]. Cancer is a major disease that seriously threatens human health. Tumor cells consume a large amount of nutrients. Treatments such as surgery, radiotherapy, and chemotherapy have been shown to decrease the body's capacity to maintain a healthy diet [7]. This study focused on patients with these two types of diseases. Through nutritional care combined with psychological intervention, the study examined the nutritional status, psychological state, well-being, quality of life, serum inflamed fuel serum levels, and adverse effects of the patients in order to investigate the effectiveness of this combined intervention.

Regarding nutritional status metrics, no notable differences were identified between the two patient groups before the treatment. After the intervention, the observation group exhibited higher levels of serum albumin, prealbumin, and transferrin compared to the parallel set. This suggests that the integration of nutritional support and psychological counseling is effective for enhancing patients' nutritional condition [8–10]. The observation group conducted nutritional risk assessments and management, created tailored nutritional supplement plans based on detailed nutritional evaluations, and offered dietary education, guidance, and ongoing support to help patients maintain a balanced diet in and out of the hospital. Psychological counseling helped to reduce negative emotions, boost appetite, facilitate nutrient uptake, and consequently improve nutritional status [8–10].

The psychological assessment outcomes indicated no significant differences in the SAS and SDS scores among the two patient groups prior to the intervention. Following the intervention, the scores of the observation group significantly decreased compared to baseline levels and were lower than the parallel set's scores. This

demonstrates that the integrated intervention effectively mitigated the patients' negative psychological conditions. Cognitive behavioral therapy, administered by professional psychologists, aids patients in forming trusting relationships, recognizing and addressing cognitive distortions, reinterpreting negative emotions [10,11], changing adverse mental states, dealing with negative self-evaluations, and at the same time improving patients' ability to cope with the risk of disease recurrence and social barriers, thereby improving patients' psychological conditions in many aspects [12,13].

Regarding aspects of quality of life, before the implementation of the intervention, patients in both groups had comparable scratches in all aspects of the questionnaire on quality of life. Although they improved after the intervention, there were differences in some dimensions. This indicates that the integration of nutritional care and psychological intervention exerts a notable influence on patients' quality of life [14,15]. The improvement of nutritional status provides patients with a better physical foundation, and the improvement of psychological state enables patients to experience better in dimensions such as mental health and social function, which comprehensively improves the quality of life [16,17].

The findings on serum inflammatory markers revealed no notable differences in levels of interleukin-1 β (IL-1 β), matrix metalloproteinase-1 (MMP-1), and tumor necrosis factor-alpha (TNF- α) between the patient groups before treatment. Post-treatment, the observation group exhibited reduced levels of these serum inflammatory markers compared to the parallel set. This indicates that the combined intervention effectively reduced serum inflammatory marker levels. Adequate nutritional support from nutritional care bolsters the body's defenses, while psychological intervention enhances mental well-being and diminishes inflammatory responses via the neuro-endocrine-immune regulatory network [17–19].

Regarding adverse reactions, the observation group experienced a lower rate compared to the parallel set. This indicates that the integrated intervention strategies are safer. This shows that the combined intervention measures are safer. Reasonable nutritional care can reduce adverse reactions caused by nutritional problems [20,21], and psychological intervention can relieve patients' tension and reduce the possibility of adverse reactions caused by psychological factors [22].

Although this study has made some achievements, there are still many limitations. In terms of sample size, only 80 patients with both ulcerative colitis and cancer were selected, which is a relatively small sample size. This can lead to study results that are biased and not fully representative of all such patients, limiting the generality of study results, and patient groups with different characteristics may respond differently to nutritional care and psychological interventions, making it difficult for small samples to cover such diversity. The intervention time was set at only 20 weeks, which was relatively short and there was a lack of long-term follow-up. The short duration of the intervention may not fully demonstrate the long-term effect of the combined intervention, the development of the disease and the recovery of the patient is a dynamic process, and in the long term, the nutritional status, psychological status and quality of life may change, and the current study cannot clarify these trends. The lack of long-term follow-up also makes it difficult to assess the impact of interventions on disease recurrence rates, long-term complications, and

so on. In addition, the study did not use a blind method, which may introduce bias. Knowing the situation of intervention grouping, medical staff and patients may be unconsciously affected by subjective factors in the evaluation process, resulting in the evaluation of various indicators of patients not being objective enough, thus affecting the accuracy of the study results. In view of the above limitations, future studies can expand the sample size to include more patients from different regions, ages, and disease stages; Extended intervention time and long-term follow-up to observe the long-term effects of the combined intervention; at the same time, the blind method or other methods should be considered to reduce the bias in the study process so as to more accurately evaluate the impact of nutritional care combined with psychological intervention on patients with ulcerative colitis and cancer, and provide a more reliable basis for clinical care.

In summary, this study conducted a combined nutritional care and psychological intervention study in a single-center, relatively small cohort of patients with ulcerative colitis and cancer. The results showed that the combined intervention showed positive effects in improving the nutritional status of patients, alleviating the adverse psychological state, reducing the level of serum inflammatory factors, reducing the occurrence of adverse reactions and improving the quality of life to a certain extent. However, it should be made clear that this study has some limitations, such as a relatively small sample size and a single-center study, which may limit the universality of the findings. In current clinical practice, medical staff can refer to this study and pay attention to nutritional care and psychological intervention for such patients. For example, based on individual differences of patients, basic nutrition plans and psychological support strategies should be developed initially, and patients' reactions should be closely monitored and timely adjusted. At the same time, strengthen their own nutrition nursing and psychological intervention skills training to provide patients with better nursing services. Only through continuous in-depth research and practical exploration can we provide a solid and reliable scientific basis for clinical nursing, optimize the nursing model, and effectively improve the prognosis and quality of life of patients.

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