

# The Role of Nursing Intervention in the Evaluation of the Efficacy of Patients With Esophageal Cancer Radiotherapy

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**Abstract:** Esophageal cancer is a relatively common malignant tumor. Nowadays, radiotherapy is the main treatment for esophageal cancer. Based on the above background, the role of nursing intervention in the evaluation of the efficacy of patients with esophageal cancer radiotherapy was proposed. Firstly, the concept of nursing intervention is summarized. Secondly, the methods of nursing intervention are introduced, which are mainly divided into three aspects: cognitive intervention, psychological intervention and behavioral intervention. Finally, the role of nursing intervention in the evaluation of the efficacy of esophageal cancer radiotherapy patients was studied and analyzed. It was found through experiments that nursing intervention can reduce the pain of patients with esophageal cancer radiotherapy and have a better quality of life.

**Keywords:** Nursing intervention; Esophageal cancer; Radiation therapy; Efficacy; Evaluation

## 1. Introduction

Esophageal cancer is a common malignant tumor, ranking 4th in domestic malignant tumors. Radiation therapy is the main treatment for esophageal cancer. However, radiotherapy also produces radiation esophagitis, which causes patients to eat pain, seriously affects the quality of life of patients, and even affects the smooth progress of radiotherapy programs. Therefore, how to take effective nursing measures to reduce the pain of eating pain in patients with esophageal cancer radiotherapy has become a concern of nursing staff<sup>[1]</sup>.

Pain is the most common symptom of cancer patients, which seriously affects the patient's treatment and quality of life. Especially the pain of patients with end-stage cancer is often relieved after the pain is actually relieved. Nursing intervention is an adjuvant treatment for pain treatment in cancer patients. Therefore, in clinical nursing work, it is important to use nursing intervention to alleviate the pain of patients and improve their quality of life. However, the role of nursing intervention in the evaluation of the efficacy of radiotherapy patients is rarely studied, so this paper studies and analyzes the role of nursing intervention in the evaluation of the efficacy of esophageal cancer radiotherapy patients<sup>[2]</sup>.

## 2. Overview of Nursing Intervention

Nursing intervention is a series of nursing activities based on a certain scientific theory, under the guidance of nursing diagnosis, according to the pre-booked intervention method. The nurse determines the nursing intervention based on the characteristics of the nursing diagnosis,

the results of the nursing research, the potential of the patient's functional rehabilitation, and the capabilities of the patient and the nurse itself. The ordering of patient health issues determines the type of intervention. Interventions help patients achieve their desired goals: prevent complications, promote, maintain or restore the patient's physical and mental functions. Interventions mainly include creating a rehabilitation treatment environment, implementing rehabilitation nursing techniques, family patient education, family patient counseling, psychological support, counseling, and introducing patients to other rehabilitation members. It also includes the application and management of prescription drugs, strengthening the rehabilitation activities taught by other rehabilitation members, maintaining the continuity of rehabilitation activities, and discharging follow-up<sup>[3]</sup>.

Nursing intervention is a variety of nursing measures taken by nurses to promote the rehabilitation of patients. It is based on clinical judgment and rich medical knowledge. The classification of nursing interventions is shown in Figure 1.

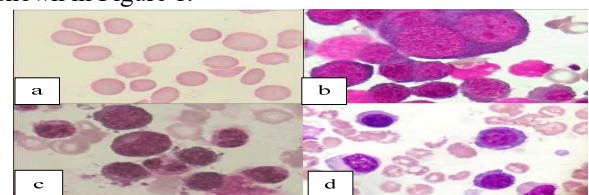


Figure 1. Classification of nursing intervention

Clinical nursing interventions tend to be inpatients, or there are obvious discomforts, symptoms, signs requiring

outpatient examination, diagnosis, referral, and clear diagnosis. This process needs to be assisted by a clinical nurse to help. All care measures taken by clinical nurses. Community care interventions tend to return to the community after hospitalization, and need to help community nurses to help resolve discomfort, health problems, pre-hospital symptoms and signs, recovery and rehabilitation, and all the care taken by community nurses [4]. The holistic nursing intervention is a positive nursing measure implemented by the nurse during the overall care of the patient to achieve a method of treating the disease. Nursing interventions can be applied to a wide variety of diseases, and all diseases that nurses can encounter can be treated with care. The diseases commonly used for nursing intervention are shown in Figure 2.

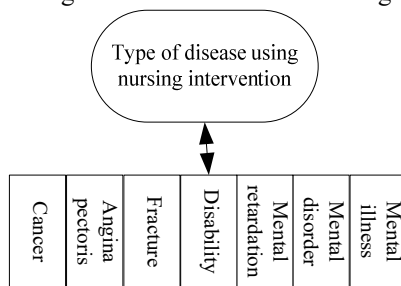


Figure 2. Types of diseases using nursing intervention

### 3. Method of Nursing Intervention

#### 3.1. Nursing intervention basis

When patients with esophageal cancer were admitted to the hospital, the nurses took the initiative and warmly received the details of the ward environment, department time, related systems, doctors in charge, responsible nurses, department heads, head nurses, etc. Nurses should eliminate the concerns of esophageal cancer patients as much as possible, reduce their strangeness and fear, and make esophageal cancer patients familiar with and adapt to the ward environment and adapt to the role of patients as soon as possible. At the same time, the patient is instructed to get to know the patient and help the family to support the patient mentally and in life. Through the above work, the patient's trust in the nursing staff is obtained, which lays a foundation for establishing a good relationship between nurses and patients, which is conducive to the patient's treatment and nursing, and also helps the nursing staff to implement the next step of nursing intervention [5].

In the nursing intervention of patients with esophageal cancer, it is mainly divided into three aspects, as shown in Figure 3.

#### 3.2. Cognitive intervention

Most cancer patients do not understand the pathogenesis, pathogenesis, treatment methods, effects, prognosis, etc.

of the disease, and there are fears and doubts about radiotherapy.

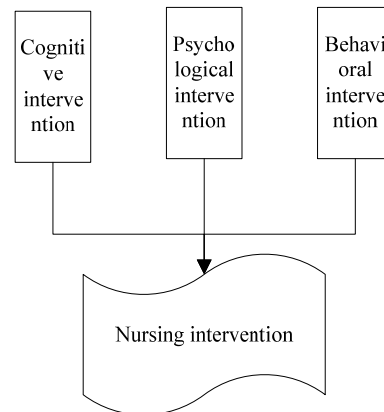


Figure 3. Nursing intervention methods for patients with esophageal cancer

A small number of patients even think that getting cancer is equivalent to sentenced to death, and to hospital treatment is just a try. Therefore, after the patient is admitted to the hospital, the nursing staff should strengthen communication, keep abreast of the patient's mental state, and understand the patient's condition. The treatment plan developed by the doctor, based on the patient's diagnosis of esophageal cancer, according to the different educational level, comprehension ability and acceptability of the patient, adopt different methods to introduce the disease related knowledge to the patient and introduce the patient with good treatment in the same case to him or her, let the patient have a certain understanding of the disease, and realize that the purpose of radiotherapy is to kill the cancer cells of the local lesion. But at the same time there will be some adverse reactions or complications, these complications and adverse reactions can be prevented and treated by a variety of methods [6].

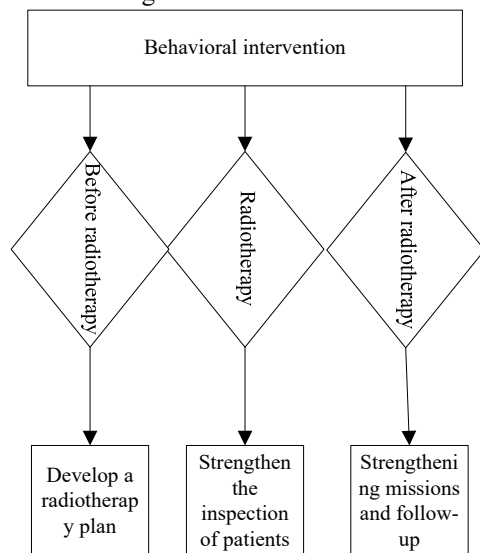
#### 3.3. Psychological intervention

Most patients have a variety of psychological problems when they have cancer. The common psychological problems of cancer patients include: role disorder, degeneration and dependence, anxiety, depression. Esophageal cancer patients have great mental stress, and at the same time bear relatively large economic pressure. The local adverse reactions during radiotherapy are heavy, and it is easier to lose confidence in treatment [7]. Therefore, nurses should be more patient and meticulous in the care of patients with radiotherapy, actively communicate and communicate with patients, patiently answer patient questions, and provide patient support both mentally and psychologically. Nurses should do their family work to get the cooperation of family members, and persuade their families not to care about the words of the patients when they lose their temper, and to give the patients the warmth of the family, which is crucial for relieving the

patient's helplessness and self-pity. In addition, it is necessary to help patients to establish self-regulating mental ability, to inform patients to maintain optimistic and stable emotions can regulate the body's potential, enhance their own immune function, and help fight against diseases and radiotherapy. At the same time, nurses should understand the economic situation of patients, strengthen communication with family members, and publicize current medical insurance, new rural cooperative medical policies, and various policies for benefiting the people and the people in the local government departments. So that patients can get help from the family and social support system, reduce the patient's economic pressure, enhance self-confidence, and help them face radiotherapy with an optimistic attitude [8].

**3.4. Behavioral intervention**

Behavioral intervention is a more important method in nursing intervention, and it is also a key method. According to the different treatment time, the nursing intervention method is also different. The specific situation is shown in Figure 4.



**Figure 4. Specific ways of behavioral intervention**

Before radiotherapy, the nurse should assist the doctor to complete various examinations in order to fully evaluate the patient, understand the patient's medical history and the functional status of each system, and accurately formulate the radiotherapy plan. At the same time, the nurse should assist the patient to clean the local skin of the radiotherapy, replace it with loose and soft clothing, improve nutrition, keep the ward environment quiet, ensure adequate sleep, improve the patient's general condition, and prepare the body for radiotherapy. Meanwhile, the nurse should tell the patient about the method of liberation therapy, and take the patient into the radiotherapy room to enumerate the cases with good therapeutic effect,

in order to mobilize the patient's enthusiasm and enhance the confidence to overcome the disease [9].

During the radiotherapy, the nursing staff stepped up the inspection, paid more attention to the patient, and did the missionary work during the patient's radiotherapy. For example, informing the patient to obey the position requirements of the technicians, and not changing the position personally, the metal products should not be brought into the room of the radiotherapy room, and the breathing should be controlled during the irradiation to ensure the accuracy of the radiotherapy site. During radiotherapy, patients need to keep the skin in the field clean and dry, keeping the marking lines clear and complete. It is forbidden to use soap and shower gel on the skin and scrub with thick towels and hot water. It is forbidden to apply tape and ointment, wear loose and soft underwear to avoid friction, irritation and sputum. If there is skin adverse reaction, the nurse should instruct the patient to use the medicine correctly under the doctor's advice, and can not use the skin ointment at will. During radiotherapy, nutrition should be improved according to different conditions of patients. The dietary condition of patients before radiotherapy is strictly controlled. Nurses should not force patients to eat food that cannot be eaten. Patients should eat less slag and soft and cool food. For those who have difficulty eating before and during radiotherapy, nurses can follow the doctor's advice to feed through the nasogastric tube for a short time, and strengthen the intravenous nutrition support to ensure the successful completion of radiotherapy. During the process of eating water, patients should closely observe the phenomenon of cough and observe the presence or absence of bleeding symptoms to prevent the occurrence of esophageal spasm. Before and after eating, patients with sputum are rinsed with warm water. When brushing their teeth, use a soft-bristled toothbrush. The movement should be gentle to avoid damage to the oral mucosa. At the same time, observe whether the patient has symptoms such as sore throat, difficulty swallowing, coughing, etc. If the above situation occurs, follow the doctor's advice to use the esophageal mixture, ultrasonic atomization and other measures to protect and repair the local mucosa and reduce the symptoms of the patient. During radiotherapy, bone marrow function monitoring should also be strengthened, blood routines should be reviewed regularly, and bone marrow suppression should be promptly treated to prevent the occurrence of infectious diseases [10].

After radiotherapy, an adverse reaction will occur. Radiotherapy is a long process, the adverse reactions may still exist or occur for some time after treatment. Therefore, nursing staff still need to strengthen the publicity and education of patients and follow up of patients after discharge. For example, the skin of the radiation area still needs protection. Patients should not use their hands to tear off the skin, do not use irritating shower gel until

fresh skin grows completely. Patients still need to strengthen nutrition, diet should be soft, less residue, avoid eating dry, rough, spicy food, pay attention to whether there is coughing in the water, there may still be esophageal spasm. At the same time, attention should be paid to the presence of bone marrow suppression, such as weakness, fatigue, etc. The doctor should instruct the patient to review the blood routine every week, pay attention to personal hygiene habits, and try not to go to places where people are noisy. According to the recovery of the body, patients should exercise in moderation and go to the hospital for regular review<sup>[11]</sup>.

#### 4. The role of Nursing Intervention in the Evaluation of Curative Effect of Patients with Esophageal Cancer Radiotherapy

##### 4.1. Experimental method

In this study, 80 patients with esophageal cancer radiotherapy were selected as subjects, and they were randomly divided into observation group and control group, 40 cases, including 49 males and 31 females. They are 45-76 years old. The pathological reports of both groups were esophageal malignancies. There were no significant differences in gender, age, physical fitness, and educational level between the two groups ( $P > 0.05$ ). Therefore, they were comparable.

In this paper, the degree of pain in patients during radiotherapy and the satisfaction of patients after radiotherapy were used as evaluation indicators. Using visual analogue scale (VAS), 0-10 represents different degrees of pain. The doctor should ask the patient about the extent of the pain, mark it, or ask the patient to draw a figure that best represents his or her pain level. 0 is painless, 1-3 is mild pain, 4-6 is moderate pain, and 7-10 is severe pain. The patient satisfaction questionnaire was issued on the day of the end of radiotherapy.

Statistical analysis was performed using SPSS 13.0 statistical software, and the count data was expressed as a percentage using the  $\chi^2$  test. The difference was statistically significant at  $P < 0.05$ <sup>[12]</sup>.

##### 4.2. Experimental result

The statistical results showed that during radiotherapy, 95% of the patients with esophageal cancer who had mild pain, the observation group accounted for 77.5%. The observation group was higher than the control group, and the difference was statistically significant ( $P < 0.05$ ), indicating that the nursing intervention can reduce the eating pain of patients with esophageal cancer radiotherapy. Comparison of eating pain during radiotherapy in the two groups of patients is shown in Figure 5.

After trials, the nursing satisfaction of the observation group was higher than that of the control group, and the

difference was statistically significant ( $P < 0.05$ ). The specific situation is shown in Figure 6.

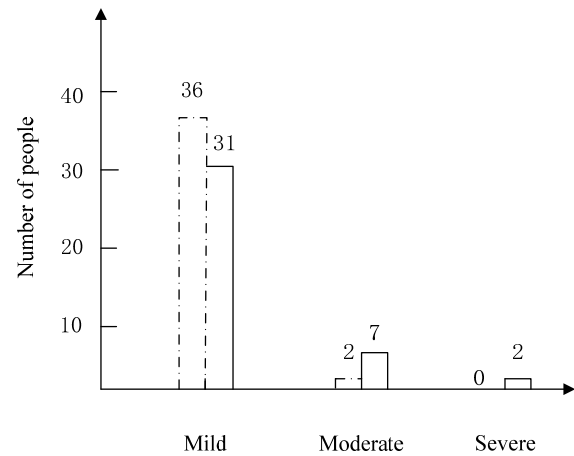


Figure 5. Comparison of pain during radiotherapy in two groups of patients

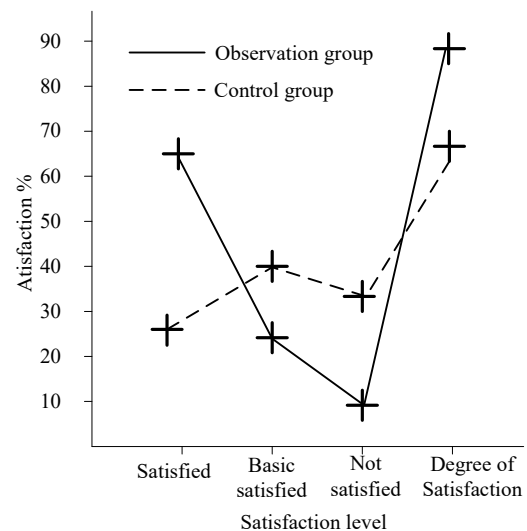


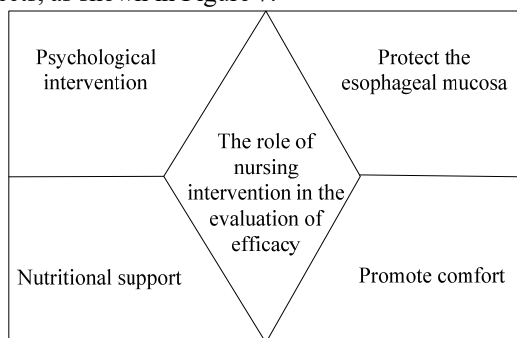
Figure 6. Comparison of satisfaction between nursing interventions in two groups of patients

##### 4.3. The role of nursing intervention in evaluating the efficacy of radiotherapy for esophageal cancer

Esophageal cancer is a common malignant tumor in China, which seriously threatens people's lives. China is the country with the highest incidence and mortality of esophageal cancer in the world. Radiation therapy Esophageal cancer has less trauma than surgery and is less restricted by organs and tissues around the esophagus. It has become the main treatment. However, while killing tumor cells, radiation also damages the normal skin mucosa, leading to the occurrence of radiation esophagitis, and the symptoms of eating pain gradually increase with the increasing dose of radiotherapy<sup>[13]</sup>. Patients are often

reluctant to eat because of eating pain, and even refuse to eat, resulting in insufficient nutrient intake and decreased body resistance, which seriously affects the quality of life of patients. Some patients have aggravated the symptoms of pain in eating, mistakenly believe that cancer has recurred or aggravated, depressed, lost confidence in the treatment of the disease, and even gave up treatment. Therefore, how to effectively prevent and reduce the radioactive esophageal mucosal response and reduce the pain of eating patients can not only improve the quality of life of patients, but also have important significance for the treatment effect and prognosis. This article focuses on the role of nursing intervention in the evaluation of the efficacy of patients with esophageal cancer radiotherapy.

Based on general routine care for 40 patients with esophageal cancer radiotherapy, we took care interventions. The results of the study showed that both groups of patients developed radiation esophagitis and developed pain symptoms. Among the patients with mild pain, esophageal cancer, the observation group accounted for 95%, and the control group only accounted for 77.5%, which was statistically significant ( $P < 0.05$ ). In addition, there was no severe pain in the observation group, only 2 cases of moderate pain. Although it was not statistically significant compared with the control group (considering the small amount of the total study), the results were consistent with the original intention of our care workers to reduce the pain level of patients and avoid serious and severe pain to promote patient comfort<sup>[14]</sup>. Overall, the nursing interventions we use can effectively alleviate the pain symptoms of patients with esophageal cancer radiotherapy, reduce and avoid the occurrence of moderate to severe pain, and improve the quality of life and efficacy of patients. The main effects of nursing intervention on the evaluation of efficacy are shown in the following aspects, as shown in Figure 7.



**Figure 7. The main role of nursing intervention in the evaluation of efficacy**

**Psychological intervention:** After suffering from cancer, patients are under tremendous psychological and psychological pressure. Combined with the pain caused by radiation therapy, patients become more anxious, depressed,

and even suspect that disease progression is no longer compatible with treatment. Therefore, we intervene psychological intervention throughout the patient's entire radiotherapy period, explain the possible adverse reactions to the patient before radiotherapy, and prevent the patient from aggravating the symptoms after eating pain symptoms. During radiotherapy, communication with patients should be strengthened to promptly guide patients' anxiety, fear and other negative emotions, and encourage their confidence in fighting disease. This study found that patients in the observation group were more proactive in radiation therapy than in the control group, and were more proactive in counseling pain relief. Studies have also shown that after psychological intervention, the immune parameters of cancer patients are improved to varying degrees<sup>[15]</sup>. Therefore, the implementation of psychological care for patients can improve the patient's immune function and reduce the physical and psychological symptoms of the patient.

**Protection of the esophageal mucosa:** Studies have shown that yogurt can protect and repair the esophageal mucosa. Kefir contains superoxide dismutase, cytokines, tumor necrosis factor, etc., which can prevent and treat radiation damage. In addition, yogurt is rich in nutrients and unique in taste. Long-term oral administration will not cause any adverse effects on the body. It is easy to buy on the market and does not increase the economic burden of patients. Also, it is easy for patients to accept.

**Nutritional support:** Under normal circumstances, esophageal cancer radiotherapy takes a long time. Radiation kills cancerous cells and damages normal cells and tissues, causing local edema of the esophagus. Patients have difficulty eating and swallowing pain. Cancer itself is a wasting disease, and poor long-term diet can lead to decreased patient resistance. Therefore, nutritional support for patients is critical. During the patient's radiation therapy, we develop an individualized diet plan for the patient based on the patient's height, weight, degree of esophageal stricture, eating habits, and nutritional needs. Through diet care, it is necessary to strengthen the nutritional intake of patients, to meet the nutritional needs of patients, and to promote tissue repair and cell regrowth.

**Promote comfort:** Pain is the highest form of discomfort. Pain occurs in radiotherapy for esophageal cancer, which seriously affects patients' quality of life and treatment confidence. With the change of medical model, the concept of nursing has also changed. The goal of the work is not only to help patients treat diseases, but also to improve the quality of life of patients is also an important mission. The work of pain care and comfortable nursing is to provide patients with humanized care and care. It is an effective nursing model, which makes the patient satisfied and comfortable in the physiological psychosocial spirit, which is conducive to the smooth implementation of the treatment plan.

## 5. Conclusion

This paper first summarizes the concept of nursing intervention; secondly, it introduces the methods of nursing intervention. Finally, the role of nursing intervention in the evaluation of the efficacy of esophageal cancer radiotherapy patients was studied and analyzed. It was found through experiments that nursing intervention can reduce the pain of patients with esophageal cancer radiotherapy. It is hoped that this article will help future research.

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