

## **Study on correlation between nursing intervention and infection rate in department of general surgery.**

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### **Abstract**

**Objective:** It is aimed to study the correlation between nursing intervention and infection rate in Department of General Surgery.

**Method:** 160 patients, who came for treatment in the Department of General Surgery of our hospital from June 2014 to January 2016, were selected as the investigation subjects, who were divided into an observation group and a control group according to the random digital method, and either group was comprised of 80 patients. Conventional nursing was adopted for the control group, while general nursing intervention for the observation group. Then, comparative analysis was carried out for hospitalization periods, infection rates, nursing satisfactions and so on of the patients in both groups.

**Results:** The hospitalization period and infection rate of the observation group were lower than those of the control group, of which the difference between the two groups was significant ( $t=5.221$ ,  $P=0.028$ ;  $t=4.370$ ,  $P=0.043$ ); The nursing satisfaction of the patients in the observation group was higher than that in the control group, of which the difference between the two groups was significant, ( $X^2=6.851$ ,  $P=0.004$ ).

**Conclusion:** The nursing intervention could substantially decrease the infection rate of the patients in the Department of General Surgery and improve nursing satisfaction of the patients

**Keywords:** Department of general surgery, General nursing intervention, Infection rate, Nursing satisfaction.

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### **Introduction**

Infection during hospitalization period of the patient, also called nosocomial infection, is a primary factor in assessing service quality of a medical unit [1]. As there are many patients in the Department of General Surgery, their conditions and pathogenic factors are multiple, so that the infection rates of the patients in Department of General Surgery are higher than those in other departments [2,3]. The trauma formed by operation of the patients causes immunity decrease of the body, so that a serial complications, such as incisional wound infection, pulmonary infection, fever and so forth after the operation, may occur easily, prolong the hospitalization period of the patient and result in heavy burden for the body and mind of the patients and their families [4]. In recent years, studies proved that effective nursing intervention could reduce the infection rate of the patient in Department of General Surgery and improve their nursing satisfaction [5].

The nursing work is mainly as follows: the nurse provides the patient with a relatively comfortable treatment environment by all means and ways during nursing, so as to well and actively cooperate with the doctor's treatment, improve life quality of

the patient and help him to leave the hospital as soon as possible. The general nursing intervention means should be adopted to the patients to render careful and circumspect nursing services and fulfil specific details as possible so as to improve the compliance of the patient [6]. In this study, 160 patients in Department of General Surgery were separately treated with general nursing intervention and conventional nursing and comparative analysis was carried out for hospitalization period, infection rate, nursing satisfaction and other indices of the patients in two groups to investigate the effect of nursing intervention on infection rate in Department of General Surgery and their correlation. Here, the statistical analysis results were reported as below.

### **Materials and Methods**

#### **Data**

160 patients, who came for treatment in the Department of General Surgery of our hospital from June 2014 to January 2016, were selected as the investigation subjects, including 88 male patients and 72 female patients with the ages of 34-47 y and mean age of  $41.1 \pm 6.8$  y. Among them, there were 45

gallstone patients, 53 appendicitis patients, 24 digestive tract hemorrhage patients, 8 angionosis patients, 11 hepatocirrhosis patients, 19 patients of other diseases, 17 combined hypertension patients and 9 combined diabetic patients. According to the random digital method, the patients were divided into an observation group and a control group with 80 patients in either group. The observation group consisted of 43 male patients and 37 female patients, with ages of 32-47 y and mean age of  $40.3 \pm 7.5$  y. The control group consisted of 45 male patients and 35 female patients, with ages of 21-70 y and mean age of  $39.5 \pm 7.2$  y. There were no significant difference ( $P > 0.05$ ) in age, sex, disease type and other general data of the patients in both groups.

### **Conventional nursing of patients in control group**

The conventional nursing method of Department of General Surgery was adopted for the patients in the control group. Besides the conventional nursing, general nursing intervention was adopted for the patients in the observation group, including nursing interventions before, during and after operations.

**Nursing intervention before operation:** It was required to keep quiet relatively in the ward before operation to guarantee resting quality of the patients. Mental training was carried out properly for the patients before the operation to release their nervousness before the operation. The numbers of escort and nursing persons were controlled every day for fear that the patient might be over-thinking along or could not have a good rest due to too many people, because of being blind to the process, the patient, who underwent the surgery for the first time, might be worried about it and afraid of risk or cost. In this case, the nursing staff should explain the operation procedure to the patient before operation and answer the patient's questions on the operation. The nursing staff might use pictures or videos to explain infection knowledge in Department of General Surgery to the patient and his/her family so that they could enhance their attention to infections inside and outside the hospital and reduce nosocomial infection rate fundamentally.

**Nursing intervention during operation:** The air-exchange rate of the operation room was controlled to reduce the entrance and exist of personnel as much as possible and to reduce the density of bacteria, because too low temperature might lower the immunity of the human body, the temperature in the operation room should be controlled in order to avoid infection of the wound after the operation [7].

**Nursing intervention after operation:** The wound should be kept clean after operation. The occurrence probability of wound infection was relatively high in the first 3 d after the operation, close attention should be paid to the resume degree of operating incision and the infection, if any, should be treated timely. The nursing staff should be warm during change of dressing and carefully explain precautions during operation and after discharge toward the patient and his/her family. After operation, the bed for the patient can be elevated to facilitate the breathing and drainage of the patient. In case the patient

breathes irregularly, the tracheotomy or tracheal cannula should be done timely. The patient should be guided to get off the bed for exercise according to the state of the illness.

### **Assessment indices**

Hospitalization period, infection rate and nursing satisfaction were observed for the patients in both groups after the operation. The questionnaire proposed by our hospital was used to investigate nursing satisfaction of the patients, the investigation results include qualified, common and disqualified, and investigation contents mainly included three modules of nursing attitude, nursing quality and error rate.

Satisfaction=(Number of satisfied cases+number of general cases/number of total cases)

### **Statistical analysis**

SPSS16.0 system software was used to analyze the data, the computational data are expressed in  $\bar{x} \pm s$  the counting data was checked in  $\chi^2$  and  $P < 0.05$  was judged as significant difference between groups.

## **Results**

### **Comparative analysis of hospitalization period and infection rate of the patients between two groups**

The hospitalization period was  $14.2 \pm 2.3$  d for the patients of the control group and  $9.7 \pm 1.8$  d for the patients of the observation group. So, the hospitalization period of the observation group was lower than that of the control group, so that the difference between two groups was significant,  $P < 0.05$ . The infection rate was 8.75% for the control group and 3.75% for the observation group. So, the infection rate of the observation group was lower than that of the control group, so that the difference between two groups was significant,  $P < 0.05$ , as specified in Table 1.

**Table 1.** Comparison of hospitalization period and infection rate for patients of two groups.

Group	Case	Hospitalization period/d	Wound rate	infection
Observation group	80	$9.7 \pm 1.8$	0.0875	
Control group	80	$14.2 \pm 2.3$	0.0375	
t value		5.221	4.37	
p value		0.028	0.043	

### **Comparison of nursing satisfactions of the patients of two groups**

The nursing satisfaction was 82.5% for the patient of the observation group, which was higher than 55.0%, the nursing

satisfaction of the control group, and the difference between two groups was significant ( $P < 0.05$ ), as specified in Table 2.

**Table 2.** Comparison of nursing satisfactions of patients in two groups.

Group	Case (n)	Satisfied (n)	General (n)	Dissatisfied (n)	Nursing satisfaction (%)
Observation group	80	66	10	4	0.825
Control group	80	44	30	6	0.55
t value					6.851
p value					0.004

## Discussion

Post-operation infection is a complication with high complication for patients of Department of General Surgery after the operation, has an effect on recovery speed of the patients and bring various inconveniences for the patient and his/her family. Moreover, it may cause anxiety of the patient easily and leads to tense relation between the hospital and the patient [8,9]. The factions, causing high post-operation infection rate of the patient in the Department of General Surgery, are relatively complicated, such as age, condition and medical history of the patient, level of nursing staff, unfair usage of antibiotics and so on. Relevant studies have proved that top-grade nursing for the patients of the Department of General Surgery can largely reduce the infection rate of the patient [10]. According to the features of the patients in the Department of General Surgery, our hospital has adopted nursing intervention measures corresponding to them: actively strengthen negotiation and communication with the patient before and after operation, reduce the patient's dread for the hospital and operation and release the relation between the hospital and the patient; enhance sterile training for nursing staff, intensify sterile operating consciousness of the nursing staff and get done with and earnestly maintain sterilization and isolation from time to time to avoid iatrogenic infection caused by aggressive operation; strengthen local nursing for the patient before and after operation, reasonably use antibiotics according to doctor's advice to avoid dysbacteriosis in the body of the patient and improve low immunologic function of the patient. Combining the above two aspects, our hospital has adopted the general nursing intervention method-top-grade nursing intervention for the patient before, during and after the operation, respectively. The results of this study indicated that the hospitalization period and infection rate of the patient, of which the general nursing intervention was adopted, was significantly lower than those of the patient treated with conventional nursing in Department of General Surgery, and the nursing satisfaction of the patient was higher relatively.

## Conclusion

The nursing intervention can substantially reduce the infection rate of the patient in the Department of General Surgery and improve nursing satisfaction of the patient.

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