

# Analysis of the Effect of Infection Control in Hospital Operation Room

Junling Li, Honglei Lv\*

Qingdao Ninth People's Hospital, Qingdao 266000, Shandong Province, China

**Abstract: Objective:** To explore the implementation effect of nursing management in operating room for hospital infection control. **Methods:** 100 cases of patients who received surgical treatment in our hospital from 2019 to 2020 were selected and divided into observation group and control group according to different nursing management methods in operating room. Patients in the control group received routine nursing management services, while patients in the observation group received systematic and high-quality comprehensive management services based on routine nursing management services. **Results:** The air colony count and hand colony count of the observation group were significantly better than those of the control group. At the same time, the incidence probability of infection in the observation group was also significantly lower than that of the control group, with significant difference between the groups, with statistical value ( $P < 0.05$ ). **Conclusions:** In view of the occurrence of nosocomial infection, the implementation of high-quality operating room nursing service can effectively control it, reduce the probability of occurrence, and ensure the safety of patient treatment, which is worthy of clinical application.

**Keywords:** Operating room; Nursing management; Nosocomial infection

**Publication date:** January, 2021

**Publication online:** 31 January, 2021

\***Corresponding author:** Honglei Lv, 923232287@qq.com

## 1 Introduction

Hospital infection literally means the infection during

hospital treatment and the infection after discharge. This will be very serious harm to the patient's body and psychology, and then lead to the aggravation of the patient's condition, and even lead to medical disputes. Operating room is a high risk department for patients suffering from infection. Therefore, strict management system must be established to ensure aseptic operation. Conventional nursing management methods, the overall nursing model is not systematic, comprehensive and institutionalized, which leads to unclear nursing objectives, nursing staff's awareness of high quality nursing is not perfect, there are problems such as insensitive work response and low work efficiency. Therefore, the article selected 100 patients as the research object, put forward more high-quality and comprehensive operating room nursing management, applied it to the control of hospital infection, and studied its specific application effect, which is reported as follows.

## 2 Material and methods

### 2.1 General information

100 cases of patients who received surgical treatment in our hospital from 2019 to 2020 were selected and divided into observation group and control group according to different nursing management methods in operating room. Patients in the control group received routine nursing management services, while patients in the observation group received systematic and high-quality comprehensive management services based on routine nursing management services. There were 50 patients in the control group, including 30 males and 20 females, aged from 30 to 70 years old, with an average age of  $(50.12 \pm 1.13)$  years; There

were 50 patients in the observation group, including 32 males and 18 females, aged from 32 to 70 years, with an average age of  $(51.14 \pm 1.21)$  years. There is no difference in the basic clinical treatment between the two groups, which can be used for comparative study.

## 2.2 Methods

The control group received routine nursing management services, and the specific measures included:

(1) Create a quiet, comfortable and clean operating room environment, and regularly clean, ventilate and disinfect the operating room.

(2) The humidity and temperature in the operating room should be kept in a reasonable range to improve the adaptability of the intensifier.

(3) Regularly check, maintain and replace the equipment in the operating room.

The observation group was based on routine nursing management services, combined with systematic and comprehensive high-quality management services. Strengthen the relevant measures of infection monitoring and management. The operating room is strictly divided into restricted area and non restricted area, so as to avoid the infection caused by personnel flow. For different departments, create different operating rooms. The medical instruments, medical equipment and surgical articles in the operating room shall be placed in the specified position. Strengthen the standardization of aseptic operation. In view of the relevant personnel to carry out aseptic operation training regularly, strengthen the scientific and comprehensive grasp of aseptic operation technology, including hand cleaning and disinfection, surgical instrument disinfection and scientific and rational use of drugs and so on.

Strengthen the management of ward. The operating room was strictly divided into bacterial area and sterile area. For example: The patients with infection and specific infection were treated in the operating room. In addition, ensure that the dressings and instruments used in the operation process are strictly disinfected and marked to avoid mixing with other excipients. The operation process should be strictly in accordance with aseptic operation, including hand washing, dressing of isolation clothing, nurse Putai, and aseptic drug handling and injection treatment, etc. After the operation, the air on the ground of the operating room should be strictly disinfected.

Strengthen the management of disposable medical facilities. Disposable medical supplies are widely used in operation. Therefore, the key to effectively control nosocomial infection is the application and management of disposable medical supplies. Before the use of medical supplies, the trademark, manufacturer, sterile period of validity and production batch number of the goods should be strictly and carefully checked. Once the unqualified, uncoordinated, contaminated and expired products are found, the use of them should be strictly prohibited. Disposable medical supplies should be stored in a special cabinet, and the cabinet should be clean and dry, and the bacteria content should be strictly controlled. The disposable medical supplies should be incinerated.

Strengthen the nursing service for patients with surgery. In strict accordance with the relevant requirements of the procedure, the high-quality nursing work will be implemented in the operation of patients with skin preparation and surgical incision infection prevention. At the same time, we need to pay close attention to the changes of patients' vital signs after the operation. If there is any abnormality, we should report it to the attending doctor as soon as possible. In addition, patient medication guidance to patients, regular turnover and skin care for patients and other related nursing measures.

## 2.3 Evaluation criteria

The air colony count and hand colony count of the two groups were compared; The probability of infection was compared between the two groups.

## 2.4 Statistical analysis

SPSS 24.0 statistical software was used to process the data. The count data was expressed by  $(n / \%)$ ,  $\chi^2$  test, and the measurement data was expressed by  $(\bar{x} \pm s)$ , t test.  $P < 0.05$  was considered to be statistically significant.

## 3 Results

### 3.1 Comparison of air colony count and hand colony count between the two groups

The air colony number and hand colony number of the observation group were significantly less than those of the control group, and the difference between the two groups was significant ( $P < 0.05$ ).

**Table 1.** Comparison of air colony count and hand colony count between the two groups [ $\bar{x} \pm s/ \text{min}$ ]

Group	Air bacterial count before operation	Air bacterial count after operation	Hand colony count
Observation group ( $n = 50$ )	882.31±113.62	91.64±1.28	2.02±2.04
Control group ( $n = 50$ )	890.62±118.34	323.14±62.27	8.17±2.14
<i>T</i> value	4.113	4.212	4.312
<i>P</i> value	0.023	0.013	0.024

### 3.2 Comparison of infection incidence between the two groups

In the observation group, there was 1 case of upper respiratory tract infection, 1 case of urinary tract infection, and the infection rate was 4.0%; In the control group, there were 2 patients with upper respiratory tract infection, 2 patients with lower respiratory tract infection, 3 patients with incision infection, 1 patient with urinary tract infection, and the infection rate was 16.0%.

## 4 Discussion

Operating room is the key department of hospital infection prevention. The infection probability of operating room is very high, accounting for the vast majority of the overall infection probability of the hospital. And nursing staff will be involved in each process of operating room operation<sup>[1]</sup>. Therefore, nurses need to strictly follow the rules and regulations to carry out nursing operation, which is the direct way to effectively control the occurrence of nosocomial infection<sup>[2]</sup>. In order to achieve more effective hospital infection control, comprehensively ensure the improvement of the diagnosis and treatment effect of patients, and improve the prognosis of patients, the first task is to strengthen the anti infection awareness of operating room nursing staff, strictly require the implementation of various rules and procedures in operating room nursing operation, start from the details, strictly require themselves, and establish the idea that hospital infection control should start from prevention Positive awareness, to ensure the overall improvement of the quality of nursing management, in order to ensure the monopoly of infection, reduce the efficiency of infection, ensure the effect of surgical treatment, and ensure the life safety of every patient<sup>[3]</sup>.

Operating room nursing management involves every patient, which is closely related to the life and health of patients and the effect of surgical treatment<sup>[4]</sup>. Medical staff should adhere to all from the perspective of the interests of patients, strengthen

the nursing management of the operating room, strictly implement the hygiene and cleaning of the operating room, pay attention to the improvement of their professional quality, and actively improve the medical environment of the operating room. The main factors of infection during operation were as follows

**Medical equipment factors.** With the development of social economy and the improvement of medical technology, disposable medical equipment is usually used in the operating room at this stage, which is very convenient and simple. However, these disposable medical equipment need strict and effective management, otherwise it will become a major factor leading to hospital infection.

**Environmental factors.** Operating room is the main position of nosocomial infection. Because the operating room has to accept several patients every day, the operating table is used frequently, and the flow of patients in the operating room is large, which leads to the increase of particles in the air of the operating room, thus greatly improving the probability of hospital infection<sup>[5]</sup>.

**Patient factors.** Scientific, reasonable and systematic nursing intervention is needed for patients who have received surgical treatment Skin preparation and incision protection. Not strict nursing operation may lead to the invasion of bacteria, causing very serious pollution after a large number of reproduction<sup>[6]</sup>.

The conventional nursing management methods and the overall nursing mode are lack of enough systematization, comprehensiveness and institutionalization, which leads to unclear nursing objectives, unsound nursing awareness of nursing staff, insensitivity to work response and low work efficiency<sup>[7]</sup>. The high-quality nursing service proposed in this article takes patients as the core, combines with the actual situation and specific needs of patients, and develops scientific and reasonable surgical nursing management rules and regulations on this basis, and specifies the nursing operation process in the operating room as strict

regulations to implement, so as to achieve effective nursing management in the operating room<sup>[8]</sup>. The results showed that the number of air colonies and hand colonies in the observation group was significantly less than that in the control group, and in the observation group, there was 1 case of upper respiratory tract infection, 1 case of urinary tract infection, and the incidence of infection was 4.0%; In the control group, there were 2 patients with upper respiratory tract infection, 2 patients with lower respiratory tract infection, 3 patients with incision infection, 1 patient with urinary tract infection, and the infection rate was 16.0%. There was significant difference between the two groups ( $P < 0.05$ ).

Summarize the full text, the operating room nursing management requirements to patients as the core, from the nursing staff's professional care, medical supplies care and sanitation and other aspects of effective nursing management. In view of the occurrence of nosocomial infection, the implementation of high-quality operating room nursing service can effectively control it and reduce the probability of occurrence, which is worthy of clinical application.

## References

- [1] Huang SH. Effect of detailed nursing management in operating room on hospital infection control [J]. International Journal of infectious diseases (Electronic Edition), 2020,9 (2): 227-228
- [2] Liu Y. Effect of detailed nursing management in operating room on nosocomial infection control [J]. Chinese medical guide, 2020,18 (1): 286-287
- [3] Chen C. Application of detailed nursing management in outpatient operating room in hospital infection control [J]. China health industry, 2020,17 (10): 36-37,40
- [4] Ma LN. Discussion on the role of controlling nosocomial infection in the nursing management of operating room [J]. Journal of practical clinical nursing, 2020,5 (31): 153
- [5] Fu CH, Huang PF, Wang EY. Analysis of the role of detailed nursing management in hospital infection control in operating room [J]. Health care guide, 2020(16): 153
- [6] Qin DQ, Xiang SQ. Effect of detailed nursing management in operating room on hospital infection control[J]. Journal of general Stomatology (Electronic Edition), 2020, 7 (4):106-107
- [7] Liu GM. Application of operating room nursing management in improving the effect of nosocomial infection control [J]. Electronic Journal of clinical medical literature, 2020,7 (59): 180-181
- [8] Liu JX. Application of detail nursing management in control of nosocomial infection in operating room [J]. Diabetes World, 2020,17(8): 254.