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Research Article

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Analysis of the Influence of Operating Room Nursing Care Management on the Incidence Rate of Nosocomial Infection in Orthopedic Surgery Patients

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Abstract: Objective: To analysis the influence of operating room nursing care management on the incidence rate of nosocomial infection in orthopedic surgery patients. **Methodology:** Fifty six orthopedic surgery patients who admitted into the hospital between January to December 2018 were enrolled into this study and randomly divided into two groups, which were the control group (under general management) and the observation group (under the operating room nursing care management). Further, the incidence rate of nosocomial infections, the incidence rate of irregular nursing care phenomena, the satisfaction score of nursing care management, and the quality of life score were observed and recorded. **Result:** The incidence rate of nosocomial infection, the incidence rate of irregular nursing care management, the satisfaction score of nursing care management, and the quality of life score of the observation group were compared to that of the control group, and the result showed $P<0.05$, indicates the statistical significance between the data indicators. **Conclusion:** The use of operating room nursing care management in patients with orthopedic surgery has shown a significant effect.

Keywords: *operating room nursing care management; orthopedic surgery; incidence rate of nosocomial infection*

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1 Introduction

With the development of medical technology and the improved quality of people's life in recent years, most of the orthopedic patients will choose to undergo surgery treatment if the bone injury level or condition had fulfilled the orthopedic surgery index, so that the painfulness can be relieve sooner and to promote the early recovery[1]. This study reported the clinical results of the effects of operating room care management on 56 orthopedic surgery patients who admitted into the hospital during January 2018 until December 2018.

2 Materials and methods

2.1 Basic information

56 patients who accepted orthopedic surgery during the period of January 2018 until December 2018 were enrolled in the study. They were randomly divided into the control group (n=28) and observation group (n=28). In the control group, the ratio of male patients to female patients is 15:13, the oldest was 71 years old, the youngest was 22 years old, and the median age was 45.65±3.28 years old; meanwhile, in the observation group, the ratio of male patients to female patients was 13:15, the oldest was 72 years old, the youngest was 20 years old, and the median age was 45.66±3.55 years old. There were no statistically significance different in the basic information of the orthopaedic surgery patients from control group and observation group, $p>0.05$.

Inclusion criteria: In accordance with the indications for spinal trauma surgery, patients and their families must agreed and recognized this surgery by signing and approve the consent for this surgery and this study must be recognized and approved by the Medical Ethics Association.

Exclusion criteria: patients who did not meet surgical indications, severe mental disorders, and during breast feeding and etc.

2.2 Methods

The control group implemented the general routine management in which to determine the job responsibilities of the nursing staff before surgery, clarified the contraindications for surgery of the patient, and understands the precautions for the operation. Before the operation, the nursing staffs must visit the patient in order to reduce the patient's negative minds, and also to prepare the instruments and materials needed for the operation.

The observation group implemented the operating room care management. (1) One day before surgery, the nursing staff visited the patient to assess the patient's condition and physical tolerance. The nursing staff also checked the patient's medical history to ensure basic information such as family history, physical function, and medical history The patients was also given dietary guidance, and the patient was not allowed to drink any water for 2 hours before surgery and not allowed to have any food for 8 hours before surgery according to the type of surgery. (2) Preoperative assessment of the patient's psychological condition, organize patients to receive health knowledge, education on publicity and psychological counseling in order to make sure the patients can fully understand nosocomial infections and its harmfulness to patients. Furthermore, the nursing staff also told the patient in detail about the successful cases of surgery under operating room care management and thus to assist the patient in building up confidence towards treatment, and give the patients relevant nursing training before the surgery. Regularly to organize and to train the nursing staff by conducting training through lectures, learning exchanges, and intensive training, and the key training content were the prevention of hospital infection and the operation. At the same time, it is necessary to fully implement the standardized operational procedures and workflow, and comprehensively implement the nursing system and related work processes through daily supervision and regular assessment. (3) Cultivate nursing staff to establish good hygiene habits and strictly follow the principle of aseptic operation during surgery. At the same time, limited the number of nursing staff in the operating room, removes the operating room garbage in time, disinfection and ventilation are carried out regularly, and the humidity and temperature of the operating room were controlled within a reasonable range. Safety management was used to handle the surgical position and surgical procedure during surgery, skin preparation was done before the surgery for the surgical incision procedures and the instruments and materials required for operation were carried out with standard disinfection. In addition, the risk factors of nosocomial infection have to be analyzed, including the influencing factors of nosocomial infection during the orthopedic surgery and then were being targeted and managed.

2.3 Observation indicators

The incidence rate of nosocomial infection, the incidence rate of irregular nursing phenomenon, nursing management satisfaction score, and the quality of life score in orthopedic surgery patients from the control group and the observation group were observed and calculated.

The standard criteria of nosocomial infection was that the body temperature exceeds 38°C, and the blood culture test showed a positive number>1. The patient may have hypotension or chill symptoms. The body drainage fluid showed purulence and the natural wound healing were delayed.

A questionnaire of the hospital were collected and statistically calculate the quality of life and satisfaction from both the control group and the observation group, the total score of the questionnaire was 100 points, the higher the value indicates the better the effect.

2.4 Statistical methods

All data from the 56 orthopedic patients were gathered and analyzed by using statistical windows software SPSS21.0. The incidence rate of nosocomial infection, the incidence rate of irregular nursing phenomenon in the control group and observation group were expressed as “rate” (%), and compared by using the chi-square (χ^2) test. The measurement data were expressed as mean±standard deviation ($\bar{x}$±s) and compared by using t–test. Values with $p<0.05$ was considered statistically significant.

3 Results

3.1 Calculation of the incidence rate of nosocomial infection in orthopedic surgery patients in the control group and the observation group

The incidence rate of nosocomial infection in the observation group (3.57%) was much lower compared that of the control group (25.00%), $p<0.05$, indicating

the statistical significance difference between the two groups.

Table 1. Comparison of the incidence rate of nosocomial infection in orthopedic surgery patients in the control group and the observation group

Group	n	Incision infection	Urinary tract infection	Respiratory infection	Hospital infection rate
Observation Group	28	1	0	0	3.57%
Control Group	28	4	2	1	25.00%
X^2					5.2500
P					0.0219

3.2 Calculation of the control group and the observation group nursing care

The nursing care management satisfaction score and quality of life score of the orthopedic surgery patients in the observation group were more favorable than the control group, $p<0.05$, indicating the statistical significance difference between the two groups.

Table 2. Comparison of nursing care management satisfaction score and quality of life score between the control group and the observation group

Group	n	Nursing management satisfaction score (marks)	Quality of life score (marks)
Observation group	28	98.54±3.22	95.54±4.34
Control group	28	88.54±4.13	90.55±3.01
t		10.1042	5.0149
P		0.0000	0.0000

3.3 Calculation of the incidence of nosocomial infection in orthopedic surgery patients in the reference group and the observation group

The incidence rate of irregular care in the observation group was 14.28% and lower than that of the control group which was 50.00%, $p<0.05$, indicating the statistical significance different between the two groups.

Table 3. Comparison of the incidence rate of nosocomial infection in orthopedic surgery patients in the control group and the observation group

Group	n	Intraoperative frequent activities	Intraoperative irregular operation	Hand hygiene is not complete	Disinfecting of the device not complete	Irregular nursing care phenomenon
Observation group	28	1	1	1	1	14.28%
Control group	28	4	3	4	3	50.00%
X^2						8.1871
P						0.0042

4 Discussions

Orthopedic surgery is a common form of surgery, however, due to the invasiveness and complexity of the operation, patients tend to experience a large area of injury, and large amount of bleeding may happen during surgery[2], and then need to take longer treatment period. These then easily to cause nosocomial infection in the patients with orthopedic surgery, especially the condition of operating room environment, the application of clinical antibiotics, and irregular behavior during surgery, may increase the incidence rate of nosocomial infection. Therefore, it is necessary to reduce the nosocomial infections in the orthopedic patients from the fundamental factors[3, 4]. Thus, it is necessary to strictly control the factors that are prone

to infection, that is, to effectively and comprehensively control the risk factors of hospital infection by adopting the scientific operating room nursing care management methods to improve the service quality and satisfaction[5-7].

In this study, the results showed that the incidence rate of nosocomial infection in the observation group was 3.57%, the incidence rate of irregular nursing phenomenon was 14.28%, moreover, the satisfaction score of nursing care management was 98.54±3.22, the quality of life score was 95.54±4.34, and these data were significantly different compared to that of the control group, $p<0.05$. It is confirmed that the application of operating room nursing care management able to reduce the incidence rate of nosocomial infections and the incidence rate of irregular nursing, which then can improve the quality of life of patients and improve their satisfaction with the services. Comprehensive operating room nursing care management procedures can improve patients' awareness to the nosocomial infections and ensure the avoidance of nosocomial infections effectively during hospitalization. Adopted and learnt the methods which can improved the theoretical knowledge and professional skills of medical staff, significantly improve the working efficiency of medical staff and reduce work negligence, and ensure to increase effectively the quality of nursing care[8-10].

In conclusions, the use of operating room nursing care management strategies for the patients with orthopedic surgery is more advantageous than the general management.

References

[1] Ding Bao, Xue Dongfang, Pan Na. Effect of operating room nursing management on the incidence of nosocomial infection in orthopedic surgery patients[J]. Qilu Nursing Journal, 2016, 22(6): 102-103.

[2] Zhou Jun, Wang Hong, Lu Hongxia. Effect of operating room nursing management on the incidence of nosocomial infection in orthopedic surgery patients[J]. Journal of Integrated Traditional and Western Cardiology of Cardiovascular Disease, 2017(8).

[3] Xu Yan. Analysis of the role and significance of operating room nursing management in controlling nosocomial infections[J]. Journal of Clinical Medicine and Literature, 2017 (02): 126.

[4] Zheng Yifei. Analysis of intervention effect of operating room nursing management on nosocomial infection in orthopedic surgery[J]. Journal of Clinical Medicine and Archives, 2017, 4(72).

[5] Luo Zhengfang. Intervention effect of operating room nursing management on nosocomial infection in orthopedic surgery[J]. Journal of Practical Clinical Nursing, 2018, 3(06): 159+161.

[6] Xiang Juan. Correlation analysis between hospital infection and operating room nursing management in surgical patients[J]. Journal of Clinical Medicine and Literature, 2017, 4(64): 12662.

[7] Qi Hefang. Logistic regression analysis of the correlation between operating room nursing management and nosocomial infection in patients with general surgery[J]. Chinese Journal of Endemiology and Prevention, 2017 (06): 115+118.

[8] Wang Weixia. Application effect of operating room nursing management in controlling hospital infection[J]. Journal of Anhui Health Vocational and Technical College, 2017(4).

[9] Wang Yuzhen. Analysis of the effect of different operating room nursing management on nosocomial infections[J]. China Health Industry, 2017(29): 115-116.

[10] Nurchasi Abu Dusuo Suo Li. Effects of operating room nursing management on prevention and control of nosocomial infections[J]. World Medical Information Digest (electronic version), 2017 (43): 258.