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Effect of Nurse Nursing Training on Cognitive Function Rehabilitation After Orthopedic Surgery

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Abstract: Objective: To study the effect of nurse nursing training on cognitive function rehabilitation after orthopedic surgery. Method: A total of 240 orthopedic patients admitted to our hospital in 16-17 years were selected as subjects of study and evaluated by professional evaluation criteria. Result: All the 120 patients in the control group had postoperative cognitive function in orthopedics. The nursing intervention denied the observation group and achieved obvious application results. Conclusion: Nursing nursing training has a serious impact on the rehabilitation of cognitive function after orthopedic surgery. Nursing intervention can improve the cognitive function of patients after surgery.

Keywords: Nursing; Patient; Disease; Cognitive function

1. Introduction

Cognitive rehabilitation after orthopedic surgery is a compulsory course in nurse nursing training. Post-orthopaedic cognitive dysfunction refers to central nervous system-related complications after surgery. The main clinical manifestations are insanity, anxiety, personality changes, and impaired memory, leading to changes in personality, social skills, and cognitive abilities and skills. The incidence of POCD is higher in patients after orthopedic surgery. If the nursing staff does not find and timely care, the elderly patients are prone to falling down, pressure sores and even self-mutilation, which hinders the patient's prognosis. This study selected 240 orthopedic patients admitted to our hospital in 16-17 years. In which, 120 patients in the observation group adopted nursing interventions and achieved better nursing results. The results are as follows [1].

2. Method of Nurse Nursing Training for Cognitive Function Rehabilitation after Orthopedic Surgery

2.1. Investigation of cases of cognitive function rehabilitation after orthopedic surgery

General data were selected from 240 patients admitted to our hospital in 16-17 years as subjects. All patients met the clinical diagnostic criteria for orthopedic diseases. In which, among the 120 patients in the control group (conventional nursing measures), 65 were male and 55 were female, aged 53-84 years, with an average of (69. 5 ± 11.9) years. The patient's mental state scale score ranged from 23 to 30, with an average score of (27.5 ± 1.3). The main anesthesia for surgery included epidural anesthesia and brachial plexus anesthesia. The operation time is 1.2-4.Sh, with an average of (2.5 ± 0.6) h. There were 120 observation groups (using nursing interventions), including 70 male patients and 50 female patients, aged 52-83 years, with an average of (70.2 ± 11.3) years. The patient's MMSE score ranged from 24 to 30, with an average score of (27.3 ± 1.2). The main anesthesia for surgery included epidural anesthesia and brachial plexus anesthesia. The operation time is 1.3-4.2h, with an average of (2.3 ± 0.7) h. Involving orthopedic surgery mainly includes: total marrow replacement, internal fixation, and internal femoral fixation. The baseline data of the observation group and the control group were basically the same and comparable [2].

2.2. Treatment of cognitive function rehabilitation after orthopedic surgery

After the two groups of patients were admitted to the hospital, the control group took routine care, and the observation group conducted targeted nursing interventions for the symptoms of cognitive dysfunction. The specific nursing interventions were as follows.

2.2.1. Psychological assessment

The doctor needs to evaluate the patient's mental and psychological state. The psychological assessment process is as follows.

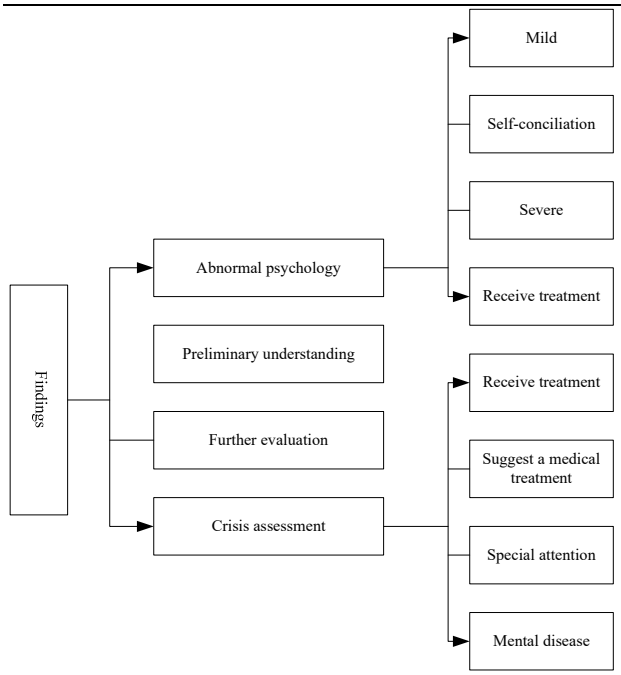

Figure 1. Psychological assessment process

Figure 1 is a psychological assessment process. When a doctor finds that a patient has an emotional abnormality, he or she should promptly give a psychological assessment to the patient and make a judgment based on the psychological assessment process in Figure 1. Nurses should especially monitor the changes in their minds with patients with depressive symptoms. At the same time, the nurses should do the relevant work of the family members, so that the patients can have the comfort and communication of the relatives or related personnel at any time, so that the familiar medical staff can psychologically guide them, and the symptoms can be better improved [3].

2.2.2. Cognitive intervention

The nurse needs to intervene in the cognitive behavior of the patient, and the cognitive behavior structure is shown in Figure 2.

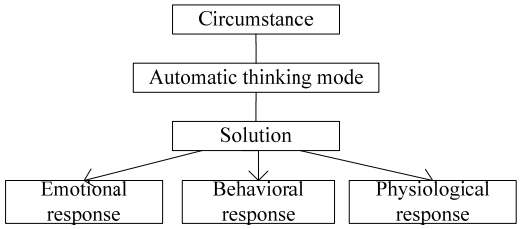

Figure 2. Cognitive behavior structure

Figure 2 shows the structure of cognitive behavior. If a patient has a problem, the patient's condition needs to be analyzed according to the cognitive behavioral structure. The doctor should promptly understand the pathogenesis of the patient's cognitive dysfunction and the patient's family members, so that they can understand the patient's emotional, cognitive state, psychological and mental factors affecting the disease. Doctors should emphasize the importance of eliminating concerns, ensuring a good mood, and recovering from illness. In the process of slow recovery of patients' cognitive function, doctors should increase the opportunities for patient communication, and meet the relevant needs of patients as much as possible, and establish a good relationship of trust [4].

2.2.3. Safety protection intervention

For patients with postoperative safety protection intervention, for some patients with restlessness and poor mood, nurses should install protective fences at their bedsides, and also take related drugs to help relieve symptoms. A quiet and comfortable rehabilitation environment should be created to avoid external stimuli, so that elderly patients can guarantee a perioperative period with a calm mood. For patients in the recovery period, nurses should encourage and help with appropriate physical exercise [5].

2.2.4. Pain observation and treatment

Pain observation and treatment. Postoperative pain is the most common symptom. Patients with intraspinal anesthesia and regional anesthesia can effectively prevent cognitive dysfunction. Medical staff should strengthen the observation of postoperative pain and promptly handle it. The control group was given only routine care in the ward, and the observation group was extended by the high quality nursing model based on the routine nursing care of the control group [6].

2.3. Pain observation and treatment specific measures

2.3.1. Create a good ward environment

Most orthopaedic hospitalized patients will have a painful performance. The responsible nurse should take the initiative to provide a quiet and comfortable hospitalization environment for the patient, maintaining a room temperature of 22-25C and a relative humidity of 55%-65%. Nurses should actively talk to patients, comfort and encourage patients, relieve tension and relieve pain [7].

2.3.2. Strengthen communication with patients

Targeted psychological comfort and counseling. During the conversation, the nurse can hold the patient's hands tightly, or caress the patient's forehead, carefully listen to the patient's description of the pain, and reveal the understanding and sympathy of the patient. Through communication, the patient's trust in the medical staff is enhanced, and their confidence in fighting pain is enhanced [8].

2.3.3. Assessment of individual pain in patients

Pain assessment is important to understand the patient's level of pain and whether it is effective. The responsible nurse should observe the cause, nature, location, rhythm and degree of the patient's pain, observe the patient's response to the pain, the accompanying symptoms at the time of the attack, understand the patient's understanding of the cause and meaning of the pain, and the attitude towards the pain. Responsible nurses perform a digital pain grading score (NRS) based on the degree of pain in the patient. 0 is painless, 1 to 3 is mild pain, 4 to 6 is moderate pain, and 7 to 10 is severe pain [9].

2.3.4. Nursing guidance for targeted pain

Patients learn some ways to prevent and relieve pain, such as doing relaxation exercises, sighing, and abdominal breathing. When the patient coughs or takes a deep breath, he or she will hold the injury by hand to prevent the pain caused by the traction injury. Generally, the pain is obvious within 1-3 days after the operation, and then gradually decreases and decreases. Patients should try to take painkillers before the effectiveness of the anesthetic is lost, reducing the patient's excessive sensitivity to pain. In addition, according to the clinical characteristics of the patient, body relaxation therapy, distraction therapy, music therapy, etc. can be used to reduce the pain of the patient, improve the effect of the analgesic drug, and prolong the pain relief time. In the care operation, in addition to gentle techniques, superb technology, considerate service, providing basic care for patients, it should also pay attention to the evaluation of comfort effects in the application, innovation and research of nursing technology [10].

2.3.5 Guidance function for health education

Exercise and early activities can alleviate pain and prevent complications. Therefore, the responsible nurse should guide the patient to perform the correct functional exercise, which can be started after admission. Nurses should follow the principle of gradual progress, develop exercise plans according to the patient's condition and tolerance, and use cold and hot compresses, manual massage, acupuncture, etc. to alleviate the pain of patients. The nurse guides the chest, deep breathing, effective cough, and upper and lower extremity muscle exercises while the patient is exercising on the bed. Exercises such as changing position without affecting treatment can increase exercise volume, increase appetite, promote bowel movements, prevent constipation, and prevent joint stiffness and muscle atrophy [11].

2.4. Efficacy basis

The clinical criterion for cognitive dysfunction in patients is that the highest score of cognitive dysfunction is divided into 30 points, of which less than 23 points have cognitive dysfunction.

2.5. Statistical method

Statistical analysis was performed using SPSS 17.0 software for statistical analysis. P <0. OS is statistically significant.

3.Investigation of Case Results of Cognitive Function Rehabilitation after Orthopedic Surgery

The MMSE scores of the two groups and the incidence of POCD were significantly improved after the 7-day postoperative MMSE scores of the observation group (P < 0.O5). The incidence of POCD in the observation group was 16.67% (P < 0.O5). The comparison between the MMSE score and the incidence of POCD in the two groups is as follows.

Table 1. Comparison of the Incidence of MMSE Scores and POCD between the Two Groups

Groups	N	Preoperative 24h	Postoperative 24h	Postoperative 7d	POCD(incidence rate%)
Control group	Postoperative	27.7 ± 1.4	23.7 ± 1.8	22.7 ± 1.4	20(58.22)
Observation group	Preoperative	27.7 ± 1.4	21.7 ± 1.6	23.7 ± 1.4	32(25.22)

After comparing the average hospitalization time and nursing satisfaction index between the two groups, the average hospitalization time and nursing satisfaction of the observation group were significantly better than those of the control group (P < 0.05). The comparison results of hospitalization time and nursing satisfaction index between the two groups are as follows:

Table 2. Comparison of Hospitalization Time and Nursing Satisfaction Index between the Two Groups

Groups	N	Average hospital stay	Nursing satisfaction
Observation group	120	21.7 ± 1.4	99.17
Control group	120	28.7 ± 1.4	76.92

4.Analysis of the Effect of Nurse Nursing Training on Cognitive Function Rehabilitation after Orthopedic Surgery

4.1. Postoperative cognitive dysfunction improves patient morbidity

Postoperative cognitive dysfunction refers to the temporary change of cognitive ability in patients who have no

mental abnormalities before surgery, and it is also sustainable. In severe cases, obvious changes in mental symptoms may occur. Among the perioperative patients in orthopedics, POCD has a high incidence rate. If the patient is not properly cared for, there may be negative events such as falling bed, catheter shedding, pressure sore, and self-harm. In orthopedic nursing practice, systematic POCI) nursing intervention for elderly patients during the perioperative period effectively avoids or reduces the occurrence of POCD [12].

POCD is a mild neurocognitive disorder, which is often transiently persistent, and permanent cognitive dysfunction can also occur. The pathogenesis of this disease is not fully understood. For elderly patients, it is generally considered to be based on the degradation of the central nervous system, neurological dysfunction caused by medical stress and multiple factors combined, but not in clinical types such as sputum, dementia and amnesia. Studies have shown that the use of advanced age, anesthesia and other psychotropic drugs, excessive operation time, lack of adequate psychological capacity, sleep disorders, etc. are all causes of POCI. With the increase of age, the physiological function of the body declines, the function of the central nervous system decreases more significantly, and the tolerance to various traumatic stress is reduced, which is easy to induce POCD. According to a study by a scholar, the proportion of POCD in patients over 60 years old is as high as 85.71%, which is much higher than the results of this study. The reason may be due to differences in disease types and medical care levels [13].

4.2. Nursing interventions improve cognitive dysfunction in patients after orthopedic surgery

The study found that cognitive impairment after anesthesia is not uncommon, and older people are more likely to occur. Depending on the time of onset and the type of surgery (cardiac and non-cardiac surgery) and age, the incidence is 10%-62%. There are not many cognitive dysfunctions in elderly patients undergoing orthopaedic surgery. At present, the mechanism of postoperative mental disorders in the elderly is not completely clear, and may have a certain relationship with the central nervous system, endocrine and immune system disorders. It is generally believed that postoperative mental disorder is an acute mental disorder syndrome caused by further disorders of the central neurotransmitter system caused by various factors on the basis of degeneration of the central nervous system in elderly patients. The results of this study showed that after the nursing intervention, the MMSE score of the observation group was significantly improved 7 days after surgery ($P<0.05$). The incidence of POCD in the observation group was 16.67%, which was significantly lower than that in the control group ($P<0.05$). The average hospitalization time and nursing satisfaction were also significantly better than those in the control group ($P<0.05$). This is similar to the results reported in the literature, suggesting that the use of nursing interventions can significantly improve cognitive dysfunction in elderly patients undergoing orthopaedic surgery [14].

4.3. Nursing intervention measure

The concept of evidence-based care (Ccvidcnc bascd nursing, EBN) is widely used in clinical work, emphasizing “prudent, accurate, and wise application of the best research basis currently available, and according to the skills and clinical experience of the nursing staff, considering the needs, wishes and actual conditions of the patients, the three combined to develop a complete nursing program.” On the basis of reviewing the literature, the author analyzes the possible risk factors of elderly patients, and formulates systematic nursing interventions, including the concept of feedforward control and risk management. By assessing the patient's mental and psychological state during the perioperative period, intensive care visits, early cognitive behavior interventions, strengthening postoperative safety protection, giving necessary sedation and analgesia, and nutritional support, a relatively complete intervention system to prevent POCD was constructed [15].

The nursing interventions adopted in this study are based on the basic principles of inquiring nursing measures, combined with years of work experience of nursing staff, to analyze the risk factors of postoperative cognitive dysfunction in elderly patients undergoing orthopaedic surgery, the corresponding system nursing interventions were developed. The nursing measures fully consider the patient's needs, wishes and their own actual conditions, and strengthen the nursing inspection by accurately assessing the mental and psychological state of the patient during the perioperative period. Early care interventions for cognitive behavior should be carried out to improve postoperative safety awareness and appropriate analgesia and shock measures. The use of more comprehensive nursing interventions to prevent cognitive dysfunction in elderly patients is beneficial to the recovery of patients' condition. The results of the study show that through nursing intervention, it not only effectively reduces the incidence of POCD in elderly patients with orthopedics, but also improves the quality of care for patients with POCI. The complete recovery time and average hospitalization of patients with POCD in the observation group were lower than those in the control group, and the satisfaction of nursing was higher than that of the control group.

5. Conclusion

In summary, elderly patients with orthopedics are prone to postoperative cognitive dysfunction. The implementa-

tion of targeted nursing interventions has important clinical significance and value for the prevention and treatment of POCI. Timely and effective nursing interventions can effectively improve the symptoms of postoperative cognitive dysfunction in elderly orthopedic patients, greatly reduce the postoperative hospital stay in elderly orthopedic patients, and improve the satisfaction of elderly patients with nursing measures to some extent. Orthopedic bedridden patients need to take early comprehensive care interventions and take care assessment at admission. Then according to the different conditions of the patient, psychological intervention, health education, diet guidance, bed function exercise and medication conditioning measures are taken to effectively alleviate the patient's pain symptoms, and it also improves the patient's quality of life, and is conducive to the recovery of the condition of the elderly patients after orthopedic surgery, which is worthy of clinical promotion.

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