Int J Clin Exp Med 2020;13(6):3798-3806
www.ijcem.com /ISSN:1940-5901/IJCEM0104550

Review Article

The application effect of fine nursing in nursing safety management for patients with orthopedic diseases and the diseases' unsafe factors and preventive measures

Changhui Xiao[1], Bo Liu[2]

Departments of [1]Hand and Microsurgery, [2]Traumatic Orthopedics, First Affiliated Hospital of The University of South China, Hengyang, Hunan Province, China

Received November 6, 2019; Accepted December 26, 2019; Epub June 15, 2020; Published June 30, 2020

Abstract: This study aimed to investigate the application effect of fine nursing in nursing safety management for patients with orthopedic diseases and the diseases' unsafe factors and preventive measures. A total of 172 patients who underwent orthopedic surgery and were admitted to our hospital from September 2015 to December 2017 were selected as the study cohort. Among them, 91 patients receiving routine nursing were included in the control group (CG), and 81 cases receiving fine nursing based on routine nursing were included in the fine nursing group (FNG). The degree of pain, the operational complications, quality of life, negative psychological scores, incidence of unsafe events, nursing quality, and satisfaction with the nursing safety prevention were analyzed. Before the nursing, the NRS pain scores, the HAMA and HAMD scores, as well as the incidence of unsafe events were roughly the same in the two groups ($P>0.05$). After the nursing, the NRS pain scores, the HAMA and HAMD scores, and the incidence of unsafe events in both groups decreased, and the NRS pain scores, the HAMA and HAMD scores, and the unsafe events in the FNG decreased more than they did in the control group ($P<0.05$). The total occurrence of complications and the nursing quality in the FNG were better than they were in the control group ($P<0.05$). The quality of life scores and the total satisfaction with the nursing safety prevention in the FNG were significantly higher than they were in the control group ($P<0.05$). In conclusion, fine nursing intervention for patients with orthopedic diseases can effectively improve the result of the operation and the safety, so as to provide more favorable conditions for postoperative rehabilitation.

Keywords: Orthopedics, fine nursing, application effect, unsafe factors, preventive measures

Introduction

Orthopedics has become one of the most important clinical departments due to the high incidence of orthopedic diseases and the complex and changeable conditions. The disease types are diverse, and mainly include femoral fractures, pelvic fractures, and joint injuries, and the diseases' recovery rate are relatively small [1, 2]. With the accelerated development of our economic and living conditions, the number of patients undergoing orthopedic treatment is increasing day by day. Among them, orthopedic patients are mainly treated by surgery. Prosthesis, steel nails, and steel plates are often used in orthopedic surgery to help patients recover normal body functions [3, 4]. There are many intractable problems in the treatment and nursing, such as long operation times, pathological changes after tissue and organ surgery, incision infections, and much work and the fast pace of the orthopedic operating room [5, 6]. Treatment can be divided into conservative treatment and surgical treatment. As patients lie in bed for a long time during the treatment, they are unable to move freely, inducing negative emotions resulting from the accompanying adverse reactions, and they suffer from severe aches and pains. Nursing services usually assist in the implementation of different treatment methods. Scientific and effective targeted nursing services can better speed up the patients' recovery [7, 8].

During the implementation of clinical nursing services for patients with orthopedic diseases, conventional nursing methods have been found to have certain effects in practice, but the effects are not good. Pressure sores, infections, and other problems are often not controlled, so it is difficult to meet the needs of effective clinical treatment [9]. Therefore, it is of great significance to explore new nursing strategies and models for patients with different orthopedic diseases in order to promote patient rehabilitation. Nursing safety is the most basic standard for nursing work, and it aims to prevent patients from physical and psychological damage, help them avoid unsafe events during their hospitalization, and prevent the occurrence of accidents [10, 11]. Fine nursing is a nursing model that is strictly and precisely standardized by the hospital managers and meets the requirements of the whole process of the admission of patients with considerate service [12]. However, there are relatively few studies on the application of accurate care for patients with orthopedic diseases. This experiment studied the application effect of fine nursing in nursing safety management for patients with orthopedic diseases, as well as the unsafe factors and preventive measures, in order to better serve patients with clinical orthopedic diseases. The details are as follows.

Data and methods

General data

A total of 172 cases of patients who underwent orthopedic surgery and admitted to our hospital from September 2015 to December 2017 were selected the study cohort. Among them, 91 of the patients receiving routine nursing were included in the control group (CG), and 81 of the patients receiving fine nursing based on routine nursing were included in the fine nursing group (FNG). There were 114 males and 58 females, with an average age of (47.43±9.27) years old. Inclusion criteria: (1) Patients who met the relevant orthopedic disease standards and with a confirmed diagnosis using an x-ray examination. (2) Patients without orthopedic surgery contraindications. (3) Patients who understood the purpose of the study and voluntarily participated in the experiment and signed the informed consent. Exclusion criteria: (1) Patients with surgical intolerance and infectious diseases. (2) Patients with primary and secondary dementia. (3) Patients with congenital diseases of the vital viscera and organs. All patients were followed up for 3 months at variable intervals. At the first month of follow-up, the patients received in-person visits or a telephone follow-up, with the frequency maintained at 2 times/week. In the last two months, it was maintained at 3 times/month.

Nursing methods

Routine nursing: (1) The case data of the patients with orthopedic diseases received in our department were carefully checked, and primary nurses were assigned to collect the relevant notices and regulations for the patients. In addition, a health education manual was distributed to the patients and their families, and the treatment standards and procedures during the admission were read to make the patients understand and cooperate with the treatment and to correctly recognize their own health status to build treatment confidence. (2) Regular communication with the patients was achieved to increase the patients' confidence in the treatment through interaction (the nursing process should be monitored to ensure a good recovery and to learn about previous recovery cases and other information). (3) The blood flow at the patients' surgery sites was observed after each surgery, as well as monitoring of the incision drainage and the postoperative rehabilitation training.

Fine nursing intervention: The fine nursing operation based on the routine nursing intervention was only carried out in the FNG, which was specifically divided into following procedures. (1) Preoperative nursing: The system of primary nursing was adopted by the nursing staff, so as to strengthen their ability to carry out their duties and tasks, and to clarify the safety awareness component of the fine nursing service. The patients received night visits initiated by the nursing staff 1 day before the surgery. The contents included explanations of the surgical considerations, actively understanding the patients' psychological activities and explaining different coping styles to the patients, reducing the patients' psychological burdens with maximum patience. The shift nurses focused on the special cases marked by the surgical patients in completing the handover work. The patients were accompanied by the circulating nurse in the operating room to

ensure the safety of the operation. (2) Intraoperative nursing: The circulating nurses were arranged to fix the temperature and humidity of operating room, check the surgical preparation of the surgical devices, perform disinfections of the routine operation rooms and monitor vital signs, strictly control the extubation pointer, and ensure the implementation of the effective operation of each surgical procedure. The operating room was kept quiet during the operation, and the patient was gently encouraged to blot the wound to stop the bleeding with sterile gauze and to block their private parts that had not been operated on during the operation. In addition, the nurses were arranged to check the normal operation of electrical equipment at all times during the operation to prevent other personnel injuries caused by a short-circuit of the power supply, such as an electric knife not put in the sterile protective cover, or other factors. (3) Postoperative care: The nursing staff were assigned to remove the disinfectant and body fluid remaining in the patient's body after the surgery and to count the used surgical items. When a patient was awake, the nursing staff informs the patient and the patient's family of the patient's operation in time, and stabilize the patient and family's emotions to clear any worries, summarize the problems that occurred during surgery, and schedule the follow-ups and targeted rehabilitation training to guide the patients' daily diet and psychological adjustment and medication.

Potential insecurities in the nursing process

Unsafe factors of nursing work: (1) Insufficient capacity for risk assessment. Due to the lack of hospital nursing staff and the possibility of inexperienced new nursing staff, the ability to estimate the potential or existing risks of the poor prognosis of the orthopedic patients and the medical complications was not possible, and solution to the problems were limited. In addition, the orthopedic department was in line with the complex and special condition of the injured patients, which required a higher predictive ability of the nursing staff. Usually, the mechanical habit of the nursing staff could cause the outcome of the patient's condition the change easily without timely treatment, leading to adverse reactions. (2) A weak sense of responsibility. In some cases during the nursing operation, some nursing staff did not strictly implement the nursing operation procedures, to the patient's condition was not carefully observed. The orthopedic patients often suffered from fluid and electrolyte imbalance caused by surgery, and the nursing staff did not promptly notify the corresponding attending physician to take corresponding measures. (3) Lack of effective communication. Patients often suffered from emotional fluctuations caused by their illness during their medical treatment. Without the patient explaining his problem and employing great coping skills, the nursing staff could fail to communicate with the patients, and unnecessary troubles might be avoided due to timely communication with the patients.

Factors causing accidental injury: (1) Falling down: Orthopedic patients have difficulty in moving without a person to accompany them at night. Bed placement did not conform to regulations, resulting in narrow passageways. The bedside pager was out of order. A slippery floor was caused by the cleaning staff. Surgical lumbar anesthesia and other methods made the anesthesia patients feel weak, or adverse drug reactions occurred. The damage of the auxiliary means of transportation was not found in time. Patients who had been in bed for a long time began to walk. The patients' ability to control their emotions and concentration decreased, and their clothing was inappropriate. (2) Falling out of bed: Balance was reduced, and the patients experienced pain when turning over in bed. (3) Scald: Too much microwave treatment and infrared radiation treatment during the operation, too much power or too high a temperature. (4) Pressure sores: The orthopedic patients could not move autonomously in bed for a long time, and all kinds of their body functions had declined, along with a lack of nutrient intake, decreased perception, and the nursing staff did not help them turn in time.

Nursing precautions

(1) Nursing staff skills training. Different levels of medical staff were trained and assessed regularly to improve their basic nursing knowledge at a practical level. In addition, monthly training was conducted on the nursing mode for orthopedic patients. The assessment results were recorded in the performance appraisal, so that the nursing staff could pay attention to and correct their learning attitudes, in order to lay a solid foundation for good nurse-

Table 1. Comparison of the general data of the two groups of nursing subjects

Groups	Control group (n=91)	Fine nursing group (n=81)	t/X^2	P
Gender (number)			0.010	0.919
Male	60 (65.93)	54 (66.67)		
Female	31 (34.07)	27 (33.33)		
Average age (old)	47.45±9.32	47.12±9.14	0.234	0.815
BMI (kg/m^2)	21.01±1.82	21.04±1.85	0.107	0.915
Education level (case)			0.052	0.975
Primary school	22 (24.18)	19 (23.46)		
Middle and high school	49 (53.85)	45 (55.56)		
University and above	20 (21.98)	17 (20.99)		
Smoking history (case)			0.075	0.784
with	31 (34.07)	26 (32.10)		
without	60 (65.93)	55 (67.90)		
Drinking history (case)			0.007	0.935
with	41 (45.05)	37 (45.68)		
without	50 (54.95)	44 (54.32)		
Cause of injury (case)			3.449	0.327
Fall down injury	32 (35.16)	25 (30.86)		
Fall Injury	22 (24.18)	16 (19.75)		
Traffic accident injury	19 (20.88)	14 (17.28)		
Other injuries	18 (19.78)	26 (32.10)		
Types of surgery (case)			1.845	0.605
Limb surgery	42 (46.15)	37 (45.68)		
Spinal surgery	14 (15.38)	11 (13.58)		
Arthroscopic surgery	17 (18.68)	18 (22.22)		
Endoscopic surgery	18 (19.78)	25 (30.86)		
Diabetes (case)			0.010	0.919
with	31 (34.07)	27 (33.33)		
without	60 (65.93)	54 (66.67)		
Hypertension (case)			0.090	0.764
with	38 (41.76)	32 (39.51)		
without	53 (58.24)	49 (60.49)		

patient relationships and set up an orderly nursing safety management team. (2) Comprehensive risk factor assessment. The hospital equipment, environment, and the patients' overall situation and the nursing ability of the medical team were evaluated comprehensively, recording the files of high-risk patients and informing the shift nurse of key monitoring in a timely manner. (3) Formulation of the risk protection measures. 24 h care was made available for the patients with dyskinesia, and the bedrail was strengthened according to the actual situation. Patients with mental retardation were restrained to prevent them from falling, and the emergency strategy was improved and emergency related records and reports were made. (4) Health education. The patients and their families should pay more attention to risk factors, and encourage the patients and their families to cooperate and participate in the activity, and confirm the results of publicity and education after health education.

Observational indexes

(1) The degree of pain was scored using the NRS pain score, with a total score of 10, and the higher the pain, the higher the score [13]. (2) The quality of life score was assessed using the GQOL-74 quality of life scale, with a total score of 0-100 points, and the higher the score, the more obvious the advantage [14]. (3) The Hamilton Anxiety Scale (HAMA) and the Hamilton Depression Scale (HAMD) measured the psychological statuses of the patients in the two groups before and after treatment [15]. (4) The unsafe incidents and the quality of care and the level of care satisfaction of the surgical patients were recorded in detail. (The quality of care was the self-made score scale of the hospital, with 10 points for each score. The higher the score, the closer the standard of care was to the perfect level. Nursing satisfaction was a self-made nursing questionnaire survey with a total score of 100 points. >90 points, 60-89 points, <60 points were greatly satisfied, basically satisfied, and dissatisfied).

Statistical methods

The data results were entered into SPSS 20.0 statistical software for processing, and the enumeration data were qualified using chi-square tests and in the form of [n (%)]. The measure-

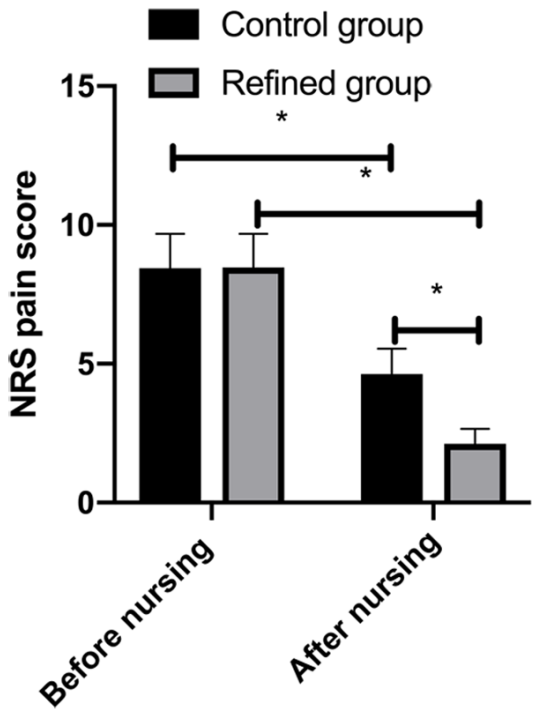

Figure 1. Comparison of the NRS pain scores between the two groups. After nursing, the NRS pain scores of the nursing objects in both groups decreased, and the NRS pain scores of the FNG were lower than those of the CG. Note: * represents P<0.05.

ment data were qualified using t tests and expressed as the means ± standard deviations. Prism 8 software was used for drawing, and P<0.05 was considered statistically significant.

Results

Comparison of the general data

Table 1 Comparison of the general data of the two groups of nursing subjects. There were no significant differences between the two groups in terms of gender, average age, education level, or cause of injury (P>0.05). More details are shown in **Table 1**.

Comparison of the NRS pain scores between the two groups at different nursing time nodes

The NRS pain scores of the nursing objects in the two groups before the nursing was approximately the same (P>0.05), but the NRS pain scores in the nursing objects in both groups after nursing were decreased, and the NRS pain score of the FNG was lower than that of the CG (P<0.05). More details are shown in **Figure 1**.

Comparison of the total incidence of complications between the two groups

The incidence of complications in the FNG was better than it was in the CG (P<0.05). More details are shown in **Table 2**.

Comparison of the quality of life between the two groups of nursing subjects

The quality of life scores in the FNG were significantly higher than they were in the CG (P<0.05). More details are shown in **Figure 2**.

Comparison of the negative psychological scores of the nursing objects between the two groups at different time nodes

There was no significant difference in the HAMA and HAMD scores between the two groups before the nursing (P>0.05), and the HAMA and HAMD scores in the two groups after nursing were lower than they were before the nursing, and the HAMA and HAMD scores were lower in the FNG (P<0.05). More details are shown in **Figure 3**.

Comparison of the incidences of unsafe events at different nursing time nodes between the two groups

Before nursing, the incidence of unsafe events was similar between the two groups (P>0.05). After the nursing, however, both groups showed a decrease, and the FNG showed a greater decrease than the CG (P<0.05). More details are shown in **Table 3**.

Comparison of the nursing quality between the two groups of nursing objects

All the indexes of nursing quality in the FNG were better than those in the CG (P<0.05). More details are shown in the **Figure 4**.

Comparison of the satisfaction of nursing safety prevention scores between the two groups of nursing objects

The total satisfaction of nursing safety prevention in the FNG was higher than it was in the CG (P<0.05). More details are shown in **Table 4**.

Table 2. Comparison of the total incidence of complications between the two groups [n (%)]

Groups	Control group (n=91)	Fine nursing group (n=81)	X^2	P
Infection	3 (3.30)	1 (1.23)	-	-
Bedsore	5 (5.49)	2 (2.47)	-	-
Cerebral vascular accident	4 (4.40)	1 (1.23)	-	-
Venous thrombosis	2 (2.20)	2 (2.47)	-	-
Total incidence of complications	14 (15.38)	5 (6.17)	4.434	0.035

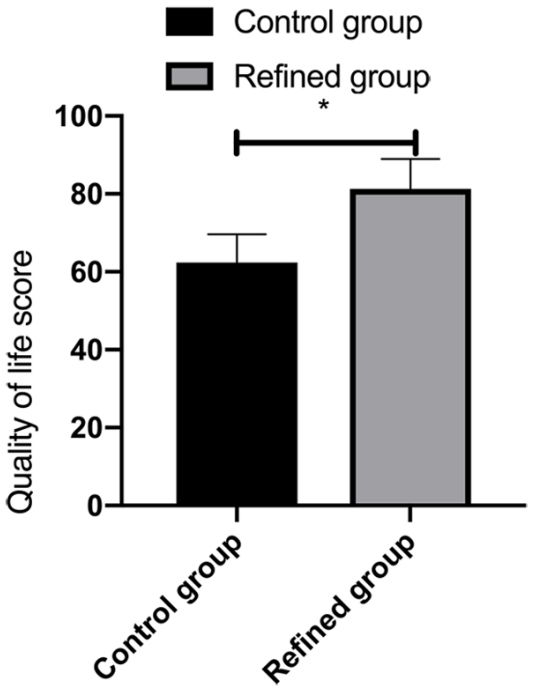

Figure 2. Comparison of the quality of life scores between the two groups of nursing objects. The quality of life score of the FNG was significantly higher than that of the CG. Note: * represents P<0.05.

Discussion

Traumatic orthopedic diseases are mostly caused by traffic accidents, falls from high places and other unexpected factors, resulting in trauma of the bones and the related tissue structures. They are characterized by a sudden onset and complicated conditions and involve multiple organ injuries [16]. In the early stages of treatment, rapid deterioration and continuous development of the disease in a short period of time as well as increased clinical complications may occur, causing great difficulties for treatment [17]. However, the overall recovery of orthopedic surgery in the operating room is closely related to the quality of the operation process and the nursing staff. The hidden dangers and risks of surgical nursing are high. It is of great clinical value to eliminate the hidden dangers and risks of nursing for the patients and nursing staff. Fine nursing is based on the patient-centered concept of modern nursing service. It is used to establish a model structure for quality nursing services and applies humanized standardized nursing measures to the clinical nursing process to prevent nursing staff from making errors resulting from negligence and business, therefore reducing the factors of care insecurity and improving the level of care services [18, 19]. In this study, the orthopedic patients were treated with fine nursing interventions at different periods of time before and after the treatment, and certain psychological adverse emotional mitigation methods were used to alleviate the negative psychological effects, to be fully prepared for treatment and to work to ensure the smooth progress of the treatment. And the effectiveness of nursing safety and its application effect were observed and analyzed.

In this study, we first compared the clinical pain performance of the patients with orthopedic diseases who received treatment, and it was found that the pain sensation of the two groups was significantly lower than it was before the nursing. Compared with conventional nursing, the fine nursing could reduce the pain of the patients. The wound areas of the patients with traumatic orthopedic diseases was usually large, and some postoperative pain symptoms might appear. Fine nursing intervention measures, such as incision infection, pain management, and timely contact with the attending physician, could effectively reduce the pain and the infection risk of the patients during treatment [20]. It was confirmed that the degree of pain improvement was consistent with the experimental results and the incidence of complications was found to be superior to the CG in the FNG. Fine nursing provides nursing services through the nursing staff's accurate grasp and understanding of nursing concepts and previous nursing experience, so as to ensure the compliance of patients during the implementation of nursing intervention measures

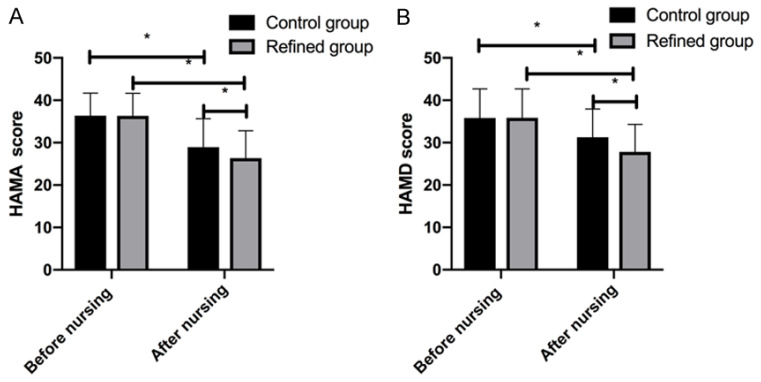

Figure 3. Comparison of the negative psychological scores of the nursing objects at different time points between the two groups. (A) The HAMA score of the two groups after the nursing were lower than those before the nursing, and the decline was more obvious in the FNG. In (B), the HAMD scores of the two groups after nursing were lower than those before nursing, and the decline was more significant in the FNG. Note: * represents P<0.05.

Table 3. Comparison of the incidence of unsafe events at the different nursing time nodes between the two groups [n (%)]

Groups	Control group (n=91)	Fine nursing group (n=81)	X^2	P
Before nursing	28 (30.77)	22 (27.16)	0.271	0.603
After nursing	16 (17.58)	6 (7.41)	3.978	0.046
X^2	4.316	11.051		
P	0.038	<0.001		

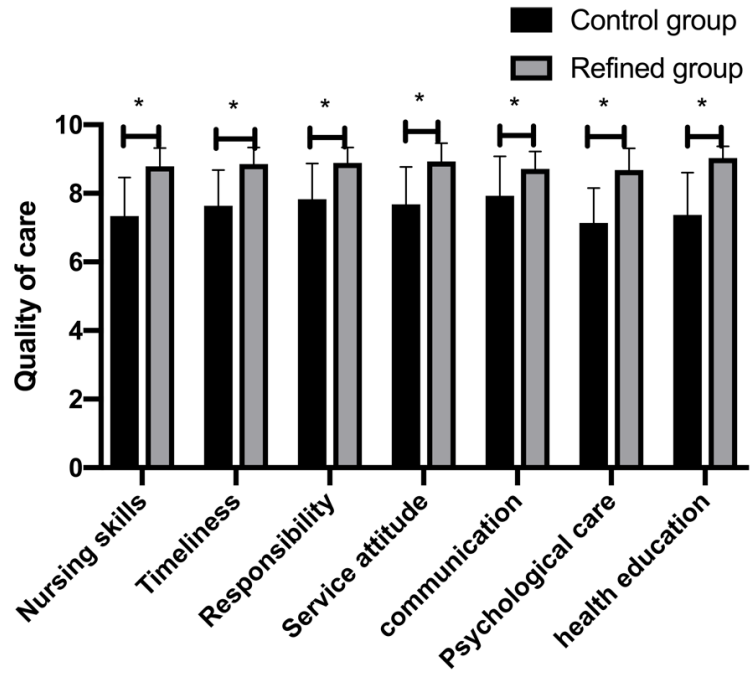

Figure 4. Comparison of the nursing quality between the two groups of nursing objects. The indexes of nursing quality, nursing skills, timeliness, sense of responsibility, service attitude, communication, psychological nursing, and health education in the FNG were all better than they were in the CG. Note: * represents P<0.05.

and dealing with the manifestations of complications to be discovered or discovered in a timely manner [21]. It was suggested that fine nursing could help prevent the complications related to patients with orthopedic diseases. And the result of the quality of life testing showed that in the FNG it was better than it was in the CG. The relevant nursing staff using the fine nursing model would make full use of the shared platform such as WeChat, actively communicating with patients in real-time and sharing health and safety education, strengthening visual communication through various presentation forms such as texts and pictures, and ensuring continuous and standardized guidance and care, and improving the overall state of the life of the patient during treatment recovery [22]. It shows that fine nursing has certain effects on optimizing the patients' quality of life. By analyzing the effects of the changes in the symptoms and signs of the changes in the patients' mental status, it was found that the anxiety and depression levels of the patients after treatment were all less than they were before treatment, and the reduction of fine nursing was more obvious. Studies have shown that [23] fine nursing can deal with and attach importance to the repair of patients' physiological and psychological states, and can implement psychological nursing intervention under the guidance of nursing diagnosis. Detailed nursing measures can be determined according to the patients' specific characteristics and functional rehabilitation, so as to strengthen the recovery of the patients' psychological and physiological functions. Previous studies

Table 4. Comparison of the satisfaction of nursing safety prevention scores between the two groups of nursing objects [n (%)]

Groups	Control group (n=91)	Fine nursing group (n=81)	X^2	P
Greatly satisfied	61 (67.03)	62 (76.54)	-	-
Basically satisfied	15 (16.48)	15 (18.52)	-	-
Dissatisfied	15 (16.48)	4 (4.94)	-	-
Total satisfactory degree	76 (83.52)	77 (95.06)	5.813	0.016

have also revealed that [24] fine nursing can strengthen the patient's own understanding of the disease and the nurses' and patients' communication, standardize the attitude of the nursing staff and guide the professional skills of the nursing staff, to ensure safety during the nursing and prevent and avoid unsafe events for its risks, and to make sure that the patient goes through the perioperative period. This is consistent with the results of our study of the incidence of unsafe events. In addition, the result that nursing quality indexes in the FNG were all better than the CG indicated that fine nursing required the strict care of nursing staff in all aspects of the patient's care. In order to further understand the impact of strengthening the nursing quality on nursing satisfaction and safety, it was found that the total satisfaction of the nursing safety of the FNG of nursing subjects was higher than that of the CG. In previous studies [25], patients with orthopedic diseases in bed had poor self-care abilities and inconvenient movements. When the patient's needs could not be met by the nursing staff and their families, it was easy for them to have different levels of dissatisfaction with the nursing staff. It indicates that fine nursing can help the patients' daily lives by improving the overall nursing quality, and improving nursing satisfaction and promoting the patients' recovery levels.

In summary, the use of fine nursing in the safety management of orthopedic care is clear. By improving the quality of care, it can effectively alleviate the occurrence of pain and complications, reduce the occurrence of unsafe incidents, and strengthen the satisfaction of the patients during treatment. However, there are still some unresolved problems in this study. For example, the specific analysis of the relationship between the psychological emotions and symptom improvement and safety events is not fully explained, which fully demonstrates how fine nursing can play a role in controlling disease progression through psychological intervention. We will continue to explore a direction in which to provide a basis for nursing patients with orthopedic diseases to reduce their unstable pathological changes.

Disclosure of conflict of interest

None.

Address correspondence to: Bo Liu, Department of Traumatic Orthopedics, First Affiliated Hospital of The University of South China, 69 Chuanshan Road, Hengyang 421001, Hunan Province, China. E-mail: bo333396298525@163.com

References

[1] Inaba Y, Saito T and Takamura K. Multicenter study of Blount disease in Japan by the Japanese Pediatric Orthopaedic Association. J Orthop Sci 2014; 19: 132-140.

[2] Deshayes MJ. Growth of the skull and bony kinetics interfering with facial morphogenesis. Conceptual bases of success in orthopedic treatments before the age of 6. Orthod Fr 2006; 77: 63-78.

[3] Pang WM, Qin J, Chui YP, Wong TT, Leung KS and Heng PA. Orthopedics surgery trainer with PPU-accelerated blood and tissue simulation. Med Image Comput Assist Interv 2007; 10: 842-849.

[4] Zou YF, Chu B, Wang CB and Hu ZY. Evaluation of MR issues for the latest standard brands of orthopedic metal implants: plates and screws. Eur J Radiol 2015; 84: 450-457.

[5] Sepehripour AH, Harling L and Athanasiou T. What are the current results of sutureless valves in high-risk aortic valve disease patients? Interact Cardiovasc Thorac Surg 2012; 14: 615-621.

[6] Kumari P, Siddegowda JB and Krishnaiah V. Appropriateness and pharmacoeconomics of surgical antimicrobial prophylaxis in open reduction internal fixation surgery practiced in a tertiary hospital compared to recommendations in the national center for disease control guidelines. Perspect Clin Res 2019; 10: 172-176.

[7] Wang SN, Qin CH, Jiang N, Wang BW, Wang L and Yu B. Is surgical treatment better than conservative treatment for primary patellar dislocations? A meta-analysis of randomized con-

trolled trials. Arch Orthop Trauma Surg 2016; 136: 371-379.
[8] de Castro RR, Ribeiro NF, de Andrade AM and Jaques BD. Orthopedics nursing patients' profile of a public hospital in Salvador-Bahia. Acta Ortop Bras 2013; 21: 191-194.
[9] Wirth CJ and Mutschler W. Major challenges in routine care: complications in orthopedics and trauma surgery (interview by Thorsten Kemm). Z Orthop Unfall 2009; 147: 524.
[10] Tondo JCA and Guirardello EB. Perception of nursing professionals on patient safety culture. Rev Bras Enferm 2017; 70: 1284-1290.
[11] Kang SJ and Min HY. Psychological safety in nursing simulation. Nurse Educ 2019; 44: E6-E9.
[12] Hohenegger M. Nursing the ventilated patient: a large measure of meticulous care needed. Pflege Z 2008; 61: 310-312.
[13] Mollenhoff A, Nolte I and Kramer S. Anti-nociceptive efficacy of carprofen, levomethadone and buprenorphine for pain relief in cats following major orthopaedic surgery. J Vet Med A Physiol Pathol Clin Med 2005; 52: 186-198.
[14] Giannicola G, Bullitta G, Sacchetti FM, Scacchi M, Polimanti D, Citoni G and Cinotti G. Change in quality of life and cost/utility analysis in open stage-related surgical treatment of elbow stiffness. Orthopedics 2013; 36: e923-930.
[15] Wu H, Zhang F, Cheng W, Lin Y and Wang Q. Factors related to acute anxiety and depression in inpatients with accidental orthopedic injuries. Shanghai Arch Psychiatry 2017; 29: 77-84.
[16] Wan Y, Zhuo N, Yang Y, Ge J and Lu X. Effectiveness of digital customized steel plate in treatment of complex fractures of limbs. Zhongguo Xiu Fu Chong Jian Wai Ke Za Zhi 2015; 29: 402-405.
[17] Henzman C, Ong K, Lau E, Seligson D, Roberts CS and Malkani AL. Complication risk after treatment of intertrochanteric hip fractures in the medicare population. Orthopedics 2015; 38: e799-805.
[18] Bari TJ, Karstensen S, Sorensen MD, Gehrchen M, Street JT and Dahl B. Readmission following complex spine surgery in a prospective cohort of 679 patients - 2-years follow up using the Spine AdVerse Event Severity (SAVES) system. Spine J 2019; [Epub ahead of print].
[19] D'Antona L, Blamey SC, Craven CL, Sewell D, Manohara S, Leemans M, Worby S, Thompson SD, Golahmadi AK, Funnell JP, Thorne L, Watkins LD, Luoma AMV and Toma AK. Early postoperative outcomes of normal pressure hydrocephalus: results of a service evaluation. J Neurosurg Anesthesiol 2019; [Epub ahead of print].
[20] Chen AC, Chou YC, Weng CJ and Cheng CY. Long-term outcomes of modular metal prosthesis replacement in patients with irreparable radial head fractures. J Orthop Surg Res 2018; 13: 134.
[21] Gaheer RS, Rysavy M, Al Khayarin MM and Kumar K. Femoral artery intimal injury following open reduction of an acetabular fracture. Orthopedics 2009; 32: 212.
[22] Liu B, Liu S, Wang Y, Zhao B, Zhao T, Zhao L, Lv W, Zhang Y, Zheng T, Xue Y, Chen L, Chen L, Wu Y, Gao G, Qu Y and He S. Neurosurgical enhanced recovery after surgery (ERAS) programme for elective craniotomies: are patients satisfied with their experiences? A quantitative and qualitative analysis. BMJ Open 2019; 9: e028706.
[23] Gordon SL and Hurst EA. Adjuncts to improve nasal reconstruction results. Facial Plast Surg 2017; 33: 82-86.
[24] Lavanchy D. Chronic viral hepatitis as a public health issue in the world. Best Pract Res Clin Gastroenterol 2008; 22: 991-1008.
[25] Briet JP, Hageman MG, Overbeek CL, Mudgal C, Ring DC and Vranceanu AM. Factors associated with met expectations in patients with hand and upper extremity disorders: a pilot study. Psychosomatics 2016; 57: 401-408.