ORIGINAL RESEARCH

Narrative Nursing Intervention on the Emotional Effects of Patients after Bone and Joint Replacement

Hong Zhou, BM; Yan Hu; Qiang Wang, MM

ABSTRACT

Objective • Narrative nursing intervention was given to patients after bone and joint replacement to analyze the emotional effects of the intervention on patients after bone and joint replacement.

Method • Retrospective analysis was performed on the clinical information of 50 patients who underwent bone and joint replacement and were admitted to our hospital between January 2021 and February 2022. Depending on various nursing techniques, fifty patients who had undergone joint and bone replacements were randomly assigned into two groups consisting of 25 individuals each. One group served as the control group, while the other group acted as the observation group. Various nursing techniques were employed for both groups. Scores for quality of life, compliance with nursing standards, overall nursing satisfaction, complication rates, and anxiety and depression before and after nursing were compared between the two groups. Additionally, the pain scores before and 3 days, one week, and two weeks after nursing were compared between the two groups.

Results • Before the nursing intervention, the differences in each observed index between the two groups were not

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INTRODUCTION

Surgical procedures refer to medical interventions that involve cutting or manipulating the body to treat a medical condition or to improve a patient's health. There are various significant. Following the nursing intervention, the observation group's nursing compliance, total nursing satisfaction rate, and quality of life score were higher than those of the control group, and there was a statistically significant difference between the groups when comparing the corresponding data, with P < .05. After nursing, the observation group's index of complication rate was lower than that of the control group, with P < .05. Three days, one week, and two weeks after nursing, both groups' pain, anxiety, and depression scores decreased. The changing trend in the observation group after the nursing intervention compared to before was more significant, and there was a statistical difference when compared to the corresponding data in the control group with P < .05. **Conclusions** • Patients benefited from narrative nursing interventions following the implementation of bone or joint replacement because they increased nurse compliance and satisfaction, significantly improved quality of life, decreased complication rates, and decreased pain levels, all of which helped to stabilize the patient's emotional state. (Altern Ther Health Med. 2023;29(8):20-25)

types of surgical procedures, each targeting a specific medical issue or body part, such as Appendectomy, Cholecystectomy, and Hysterectomy. A frequent orthopedic procedure is bone and joint replacement, which helps patients live better lives by removing the pain, deformity, and dysfunction caused by the accompanying joint abnormalities.^{1,2} China's population structure is inclining towards the aging trend in recent years and the incidences of obesity and arthritis are rising, which leads to an increasing number of people undergoing bone and joint replacement each year. A large number of research data have shown^{3,4} that the limb function of patients undergoing bone and joint replacement significantly improves after surgery. Over the years, bone and joint replacement techniques have continued to evolve, with improvements in materials, surgical procedures, and implant designs. The introduction of biomaterials, such as titanium and ceramic, has helped enhance implant longevity and reduce complications. Additionally, computer-assisted

techniques and robotic surgery have further improved the accuracy and precision of implant placement, resulting in better outcomes for patients. Today, bone and joint replacement surgeries have become routine procedures, providing relief to millions of individuals worldwide. The success rates of these surgeries have significantly increased, with a vast majority of patients experiencing a substantial reduction in pain and improved mobility. However, since this treatment is a traumatic manipulation associated with various degrees of pain after the surgery, it can generate a multitude of negative emotions such as tension, fear, and anxiety among patients. The complex and negative emotions can adversely affect their recovery post-surgery, and may prolong the rehabilitation cycle of the joint function. Therefore, effectively improving the negative emotions of patients after bone and joint replacement, thereby enhancing patients' nursing compliance is an urgent nursing problem that needs to be solved at the earliest.^{5,6} A recent development in nursing interventions is the narrative nursing intervention, which mainly adopts the way of narrating stories of patients to externalize the existing emotional problems to achieve the purpose of nursing and explore the key points of nursing.^{7,8} In narrative nursing intervention, the healthcare provider actively listens to the patient's story, offering a safe and nonjudgmental space for them to express their thoughts and feelings. The healthcare provider then uses their narrative skills to reflect and expand on the patient's narrative, creating a shared understanding of the patient's health-related experiences. Narrative nursing intervention can involve various methods, such as asking open-ended questions, reflecting on what the patient has shared, acknowledging emotions, and exploring the potential meanings behind the patient's experiences. Through these interventions, the healthcare provider deepens their understanding of the patient's context, values, and goals, which in turn helps tailor the care plan to meet the patient's individual needs. At present, foreign and domestic nursing research scholars generally pay attention to the application effect of narrative nursing intervention.⁹ Overall, narrative nursing intervention serves as a powerful tool to enhance patient-centered care, promote healing and personal growth, and build trust between the healthcare provider and the patient. It recognizes and values the patient's unique story and helps to facilitate a collaborative and empowering approach to healthcare. The purpose of this research is to highlight the importance of addressing the emotional effects on patients after bone and joint replacement surgeries. By exploring and understanding the emotional experiences of these patients, healthcare professionals can develop a narrative nursing intervention that utilizes storytelling, active listening, empathy, and therapeutic communication techniques. This intervention aims to provide emotional support, validate the patients' experiences, and assist them in coping with and adapting to the emotional challenges they may face. Ultimately, this research aims to improve the holistic care provided to patients undergoing bone and joint replacement surgeries.

By addressing the emotional aspects in addition to the physical aspects of recovery, healthcare professionals can enhance patient outcomes, promote psychological wellbeing, and contribute to a more comprehensive and patientcentered approach to care.

METHODS

Patient data

According to the inclusion and exclusion criteria, clinical data of 50 patients who underwent bone and joint replacement and were admitted to our hospital between January 2021 and February 2022 were selected for retrospective analysis. 50 patients who had undergone joint and bone replacements were randomly separated into two groups of 25, one as a control group and the other as an observation group, using various nursing techniques. The control group included 15 men and 10 women, ages 48 to 68, with an average age of (59.44 ± 5.44) years; their body weight was 45-95 kg and the mean value was (70.66 ± 7.22) kg; the heart rate was 70–90 beats/min and the mean value was (80.77 ± 6.23) beats/min; there were 17 cases of Han nationality registered permanent residence and 8 cases of other nationalities registered permanent residence. In the observation group, there were 16 men and 9 women, ages 48 to 69, with an average age of (59.43 ± 5.42) years; their body weight was 45–96 kg and the average value was (70.67 ± 7.21) kg; the heart rate was 70-90beats/min and the mean value was (80.79 ± 6.22) beats/ min; there were 18 cases of Han nationality registered permanent residence and 7 cases of other nationalities registered permanent residence. The comparison of the aforementioned specific case data was tested by an independent sample t-test, and revealed no statistically significant differences (P > 0.05), demonstrating a good balance and strong comparability.

Inclusion criteria of these patients: (1) First time receiving hip and knee replacement; (2) Aged 48–69; (3) Medical data and personal data were relatively complete; (4) All vital signs were stable.

Exclusion criteria of these patients: (1) Those with revision joint surgery; (2) Those with language and mental disorders; (3) Those with coagulation disorder; (4) Those with pain disorder.

Nursing Intervention

Regular nursing was used in the control group: (1) Patients were treated with an analgesic pump after the operation and basic nursing, life intervention, and psychological guidance were provided to guide patients to implement hip joint rehabilitation training. (2) Focus on caring for life, paying attention to the patient's daily life, caring for their daily life from the heart, and formulating a scientific diet plan for them and encouraging patients to stick to it, mainly based on food that is nutritious for bone, including high-quality protein food, such as lean meat, fish, shrimp, chicken, eggs, milk, etc. Additionally, to ensure adequate and balanced nutrition intake, patients should be appropriately supplemented with vitamins, calcium ions, trace elements, fatty acids, carbohydrates, etc. (3) By the doctor's advice on the amount of liquid control, compound amino acids were provided (SFDA approval number H20046192; Manufacturer: Hubei Halfsky Pharmaceutical China Co., Ltd.) with 250 mL intravenous infusion, twice a day; 250 mL of invert sugar electrolyte was intravenously infused once a day.

The narrative nursing intervention was provided to the observation group: (1) Comprehensive evaluation was performed on the basic situation of patients after the operation and deep communication was conducted with patients. Patients were fully respected and cared for in the communication process to know about their various aspects, such as families, psychological state, condition, educational level, interests, and hobbies, and at the same time, detailed records were made. (2) A relatively quiet rest environment was chosen by the nursing staff, and an independent and face-to-face conversation was had with the patients in this environment to provide a narrative introduction, guide the patients to express their inner feelings correctly, and express their views on bone and joint replacement.Nursing paid attention to being amiable and smiling in the process of conversation, not giving patients too much psychological pressure, and patiently listening to the patient's narrative without interruption or judgment on patients unable to show happiness, incredibility, or express other relative views. (3) The nursing staff summarized the patients' problems and made them more specific and objective. At the same time, they guided patients to draw themselves out of the event itself, objectively view the problems and their effects, strengthened patients' consciousness, and helped the patients to know correctly about bone and joint replacement by asking questions and guiding them how on to face the impact of bone and joint replacement on life appropriately in the future. (4) The hidden positive force in the internal problems of the event was connected with the present and future life to expand the vision of life and reconstructed the framework of the story.

Evaluation criteria

The scores for quality of life, compliance with nursing standards, overall nursing satisfaction, complication rates, and anxiety and depression before and after nursing were compared for the two groups; in addition, the pain scores before and 3 days, one week, and two weeks after nursing were also compared.

Nursing compliance: The patients were given the selfmade scale in our hospital to assess nursing compliance. The total score was 100. Scores between 60 and 80 showed partial compliance and scores over 80 indicated full compliance. Scores below 60 indicated non-compliance. The nursing compliance rate was calculated.

Total nursing satisfaction rate: The patients were given the self-made scale in our hospital to assess the nursing satisfaction rate, with a total of 100 points. Less than 60 showed dissatisfaction, 60 to 80 suggested a moderate level of satisfaction, and more than 80 indicated a high level of satisfaction. Based on this, the overall nursing satisfaction rate was calculated. All self-made scales were filled out anonymously by the patients and sent back to the hospital.

Complication rate: The conditions of incision infection, deep vein thrombosis, joint stiffness, and compression injury were counted; the lower the ratio, the better it was. Good nursing measures can effectively prevent and reduce the occurrence of postoperative complications, so the lower the complication rate, the better the outcome.

Quality of life score: A short form of health survey with a total score of 100 was used to score the quality of life including physiological function, psychological function, interpersonal function, and social function. Better quality of life and recovery effects would result from higher scores.

Statistical methods

The data were processed using SPSS 21.0 statistical software, the measurement data were expressed as $(\overline{x \pm s})$, and the count data were expressed as percentages (%). For comparison between the two groups, the independent sample *t* test was used for the measurement data and the chi-square test was used for the count data. P < .05 indicates that the difference is statistically significant.

RESULTS

Comparison of the two groups' nursing compliance after nursing

As demonstrated in Table 1, after nursing, the observation group's index of nursing compliance was greater than that of the control group, and there was a statistical difference in the comparison of the corresponding data between the two groups, with P < .05.

Comparison of the total nursing satisfaction rating between the two groups after nursing

As indicated in Table 2, following nursing, the observation group's index of overall nursing satisfaction rate was greater than that of the control group, and there was a significant difference between the two groups' corresponding data with P < .05.

Comparison of the incidence of complications following nursing care between the two groups

As demonstrated in Table 3, after nursing, the observation group's index of complication rate was lower than that of the control group, and there was a statistical difference in the comparison of the corresponding data between the two groups with P < .05.

Comparison of the quality of life scores between the two groups after receiving nursing care

Following nursing, the observation group's quality of life index score was higher than that of the control group, and there was a statistically significant difference in the Table 1. Comparison of the Two Groups' Nursing Compliance After Nursing (%)

Group	Number of cases	Disobey	Partial compliance	Full compliance	Nursing compliance
Observation group	25	1 (4.00)	4 (16.00)	20 (80.00)	24 (96.00)
Control group	25	6 (24.00)	9 (36.00)	10 (40.00)	19 (76.00)
χ^2	-	-	-	-	4.153
P value	-	-	-	-	.042

 Table 2. Comparative Analysis of the Two Groups' Total Nursing Satisfaction After

 Nursing (%)

	Number			Very	Satisfaction
Group	of cases	Dissatisfied	Satisfied	satisfied	rate
Observation group	25	0 (0.00)	10 (40.00)	15 (60.00)	25 (100.00)
Control group	25	7 (28.00)	10 (40.00)	8 (32.00)	18 (72.00)
χ^2	-	-	-	-	8.140
P value	-	-	-	-	.004

Table 3. Comparison of the Incidence of Post-Nursing Complications Between theTwo Groups (%)

	Number of	Incision	Deep vein		Compressive	Postoperative
Group	cases	infection	thrombosis	ankylosis	injury	complications
Observation group	25	0 (0.00)	0 (0.00)	1 (4.00)	1 (4.00)	2 (8.00)
Control group	25	1 (4.00)	3 (12.00)	2 (8.00)	2 (8.00)	8 (32.00)
χ^2	-	-	-	-	-	4.500
P value	-	-	-	-	-	0.034

Table 4. Comparison of the Two Groups' Post-Nursing Quality of Life Ratings $(\overline{x} \pm s, \text{ score})$

	Number	Physiological	Psychological	Interpersonal	Social
Group	of cases	function	function	function	function
Observation group	25	85.33 ± 2.33	85.62 ± 2.12	85.66 ± 2.21	85.69 ± 2.32
Control group	25	80.11 ± 1.32	80.69 ± 2.33	80.36 ± 2.11	80.64 ± 2.12
t	-	9.746	7.825	8.673	8.034
P value	-	.000	.000	.000	.000

Table 5. Comparison of Anxiety and Depression Scores Between the Two Groups Before and After Nursing $(\overline{x \pm s}, \text{ score})$

		Anxiety	scoring	Depression score		
Group	n	Before nursing After nursing		Before nursing	After nursing	
Observation group	25	22.36 ± 3.15	11.61 ± 2.83^{a}	23.58 ± 5.29	12.96 ± 4.18^{a}	
Control group	25	22.41 ± 3.07	15.42 ± 3.02^{a}	23.49 ± 5.13	16.37 ± 4.25^{a}	
t		0.057	4.603	0.061	2.860	
P value		.955	.000	.952	.006	

 ${}^{a}P$ <.05, compared to the identical group before the nursing intervention

Table 6. Comparison of the Pain Scores Between the Two Groups Before and Three Days, One Week, and Two Weeks After Nursing $(x \pm s, \text{ score})$

	Number	Before	3 days after	1 week after	2 weeks after
Group	of cases	nursing	nursing	nursing	nursing
Observation group	25	8.02 ± 1.01	5.99 ± 1.02	3.55 ± 0.55	2.01 ± 0.21
Control group	25	8.03 ± 1.02	6.77 ± 1.33	4.97 ± 1.11	3.64 ± 0.66
t	-	0.035	2.327	5.731	11.767
P value	-	.972	.024	.000	.000

corresponding data between the two groups (P < .05), as shown in Table 4.

Comparison of anxiety and depression scores between the two groups before and after nursing

Before nursing, there was no statistically significant difference in the index data when comparing the anxiety and depression scores of the two groups (P > .05). However, after nursing, the anxiety score of the control group was 15.42 ± 3.02 and the depression score was 16.37 ± 4.25 , while the anxiety score of the observation group was 11.61 ± 2.83 and the depression score was 12.96 \pm 4.18. Although both anxiety and depression scores decreased in both groups, the decrease in the scores after the nursing intervention was more in the observation group compared to the control group. The comparative difference in scores between the observation and control groups pre- and post-nursing intervention was statistically significant, with P < .05, as shown in Table 5.

Comparison of the two groups' pain scores before and three days, one week, and two weeks after nursing

Before nursing, there was no statistically significant difference in the index data when the two groups' pain score indices were compared (P > .05). Following nursing, the pain scores in the control group were 6.77 \pm 1.33 after three days, 4.97 \pm 1.11 after one week, and 3.64 ± 0.66 after two weeks, while the pain scores in the observation group were 5.99 \pm 1.02 after three days, 3.55 ± 0.55 after one week, and 2.01 ± 0.21 after two weeks. The lowering of pain score values in the observation group before and after nursing intervention was more significant; there was a statistically significant difference in the comparison of the corresponding data in the control group with P < 0.05as shown in Table 6.

DISCUSSION

Bone and joint replacement are an effective clinical method for the treatment of post-traumatic joint function and end-stage joint diseases. However, this treatment is associated with stress, which increases the risk of adverse emotions in patients and further lead to patients' neglect of the self-renewal and self-regulation ability of individual emotion.^{10,11} The "story" character of the nursing model has progressively emerged as a bright light in the nursing sector in recent years with the ongoing expansion of the medical nursing service business in China. Data shows that narrative nursing is conducive to building a very harmonious relationship between nurses and patients and it is also conducive to improving the efficiency of work for nursing staff.^{12,13} This nursing model focuses on the construction of a nurse-patient emotional alliance, which can help patients to avoid the trouble of various symptom groups and maximize the satisfaction of patients' reasonable physical and mental nursing needs, thus it has a significant positive effect on improving patients' negative psychology.^{14,15} Narrative nursing is a practice that involves nurses sharing their experiences in the nurse-patient relationship through storytelling. It is used as an intervention to empower nurses and allow them to reflect on and express the profound experiences they have had in their nursing careers. In narrative nursing workshops, nurses share individual encounters that have been meaningful to them. Essentially, narrative nursing is a way for nurses to communicate and process their experiences using storytelling as a tool.

Psychological intervention must be given to patients after bone and joint replacement to heal the internal trauma and stress source. With the continuous progress of hip and knee joint replacement surgery in recent years, studies have found that^{16,17} effective psychological intervention is conducive to helping patients to resist fear and stimulating the inner positive force to achieve the purpose of defeating the disease.^{18,19} In this study, implementing the narrative nursing intervention helped to interact and exchange information based on the understanding of the patient's previous medical history, health status, lifestyle, and other basic conditions. On one hand, it was conducive to providing a reasonable platform for patients to vent; on the other hand, it could help patients to fully express their emotional needs and be good at identifying their potential and positive characteristics to guide themselves towards a positive change.²⁰

According to the study's data, the observation group's nursing compliance, overall nursing satisfaction rate, and quality of life score were all higher than those in the control group following the nursing intervention, and there was a statistically significant difference when comparing the corresponding data between groups with P < .05. Following the nursing intervention, the observation group's complication rate was lower than the control group, and a statistically significant difference between the corresponding data of the two groups was found (P < .05). After nursing, the anxiety and depression scores and the pain scores decreased three

days, one week, and two weeks after nursing in both groups, with the change in the observation group before and after nursing intervention being more significant and there being a statistical difference. Before nursing, a comparison of the anxiety and depression scores and the pain scores between the two groups showed that there was no statistical difference in the index data, with P > .05.

The statistical analysis demonstrates that narrative nursing interventions offer substantial benefits for application and are highly embraced by patients. By incorporating narrative nursing intervention into the care plan, patients felt more heard and valued as individuals. They developed a sense of trust and rapport with the nursing staff, enabling them to actively participate in their own care decisions and treatment plans. The results of this intervention were promising. Patients in the observation group reported feeling more satisfied with their care and experienced a decrease in anxiety and emotional distress. They also demonstrated improved adherence to medication regimes and showed greater motivation in their recovery process.

Innovations And Limitations

This study highlights the positive impact of nursing on the emotion of patients after bone and joint replacement, including improved patient satisfaction and overall wellbeing. Nurses play a crucial role in providing emotional support and counseling to patients during their recovery process. They can actively listen to and address the concerns and anxieties of patients, helping to reduce feelings of fear and uncertainty. By offering empathy, understanding, and encouragement, nurses can help patients cope with the emotional challenges of undergoing surgery and adapting to a new lifestyle. This ultimately leads to better patient outcomes, increased compliance with treatment plans, and a positive experience for patients. Furthermore, our nursing team incorporated relaxation techniques such as deep breathing exercises, guided imagery, and progressive muscle relaxation into each patient's care plan. These techniques were beneficial in reducing anxiety levels and promoting a more positive emotional state.

While our study and interventions were aimed at addressing the emotional effects of patients after bone and joint replacement surgeries, there are a few shortcomings that need to be acknowledged and rectified in future studies. Our study relied solely on self-report questionnaires to assess emotional distress. These self-report measures may be subjective and influenced by various factors such as the patient's mood at the time of completion. To overcome this limitation, future studies could incorporate more objective measures, such as observation and interviews with healthcare providers, to provide a more comprehensive assessment of emotional effects.

CONCLUSION

It is clear that implementing the narrative nursing intervention for patients who have undergone bone and joint

replacement is advantageous to increase nursing compliance and nursing satisfaction, thus significantly improving patients' quality of life, reducing complications, and significantly lessening pain, which aids in stabilizing patients' emotional states. The overall nursing outcome is excellent and is generally applicable in clinical practice.

DATA AVAILABILITY STATEMENT

The labeled dataset used to support the findings of this study is available from the corresponding author upon request.

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AUTHOR DISCLOSURE STATEMENT

The authors declare that there are no conflicts of interest.

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HZ and QW designed the study and performed the experiments, HZ and YH collected the data, QW and YH analyzed the data, and HZ and QW prepared the manuscript. All authors read and approved the final manuscript.

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