

Influence of continuous nursing based on wechat platform on postoperative rehabilitation of patients undergoing total knee arthroplasty

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Abstract. Purpose: To explore the influence of continuous nursing on postoperative rehabilitation of patients undergoing total knee arthroplasty. Methods: 78 patients undergoing total knee arthroplasty were selected and divided into two groups according to the different intervention measures, 39 patients in each group. The control group received routine nursing, while the observation group further received continuous nursing based on WeChat platform. The action capacity, activity of daily living, and incidence of knee stiffness and other complications of the two groups were compared. Results: After continuous nursing, the action capacity and activity of daily living of the observation group were better than those of the control group, and the incidence of knee stiffness was lower than that of the control group, and the differences were statistically significant ($P < 0.05$). Conclusion: Continuous nursing based on WeChat platform can improve the function of knee joint, increase the range of motion of knee joint, improve the activity of daily living, and reduce the occurrence of related complications for the patients undergoing total knee arthroplasty.

Keywords. Total knee arthroplasty, continuous nursing based on WeChat platform, postoperative rehabilitation.

After China entered the aging society, the incidence of knee joint diseases is increasing, and with the improvement of medical level, the number of patients treated with total knee arthroplasty (TKA) is also increasing. This surgical method can effectively improve the knee function, reduce pain, and improve the quality of life of the patients. However, postoperative complications such as joint adhesion and stiffness are easy to occur. Postoperative nursing and rehabilitation exercise are very important to the therapeutic effect [1,2]. In this study, continuing nursing based on WeChat platform was applied to TKA patients, and the results are reported as follows.

1. Data and Methods

1.1. General Data

78 TKA patients who underwent surgical treatment in Jiyuan People's Hospital from December 2017 to December 2020 were selected and divided into two groups according to the different intervention measures, 39 patients in each group. The male/female ratio in the control group was 24:15, with an average age of (54.39 ± 5.71) years, and there were 21 cases of knee osteoarthritis and 18 cases of rheumatoid joints respectively. The male/female ratio in the observation group was 23:16, with an average age of (54.54 ± 5.58) years, and there were 22 cases of knee osteoarthritis and 17 cases of rheumatoid joints respectively. There was no significant difference in the relevant data between the two groups ($P > 0.05$), and the two groups were comparable.

1.2. Methods

The control group received routine nursing: rehabilitation education was carried out one day before discharge, and the postoperative rehabilitation manual of knee joint was issued, which contained diet suggestions, out of hospital rehabilitation training methods and prevention of complications. We conducted regular telephone follow-up, actively inquired about the disease conditions and corresponding training conditions, and reminded the patients to make corresponding return visits. On this basis, the observation group implemented the continuous nursing based on the WeChat platform: a) Establishing a team: the orthopedics head nurse, rehabilitation physicians and rehabilitation nurses established a continuous nursing team, and all members were proficient in the relevant knowledge of continuous nursing. A WeChat official account and a WeChat group were established, and the head nurse was responsible for the supervision and management of the group; the rehabilitation physicians formulated targeted rehabilitation plans and were responsible for the rehabilitation consultation within the WeChat group; the rehabilitation nurses were responsible for answering questions and guidance within the group, encouraging communication and exchange among patients, sharing experience, and enhancing rehabilitation confidence and compliance; the @ function in the group was used 3 days before the return visit to remind the patient of the return visit time. b) WeChat official account. The medical staff actively assisted patients in joining the WeChat group chat and following the official account, and introduced the usage of official account; regularly pushed the prognosis content through WeChat official account every day, such as the name, function and medication precautions of common analgesics, the videos of meditation therapy, muscle relaxation training and other methods, and the common manifestations, hazards and countermeasures of related complications; informed the service life, daily maintenance methods, precautions and other contents of the prosthesis, with emphasis on reducing mountaineering, running and other exercises, reducing knee wear, so as to extend the service life of the prosthesis; introduced the significance, function, methods, approaches and intensity of rehabilitation trainings. c) Recommending that family members participate in the rehabilitation training of patients, and submit the completed training content in WeChat group

every day. For those who had not submitted the training schedule for two consecutive days, the nursing staff would call to track, ask the reason, and adjust the corresponding training items according to the patient's rehabilitation conditions. Both groups were followed up for 3 months.

1.3. Observation indicators

The action capacity data of the two groups of patients were compared, including knee joint function, which was assessed according to the HSS (knee joint function scale) [3] and ROM (range of motion of knee joint), including six dimensions of the joint such as pain and function, and the comparison period was at the time of discharge and 3 months after the operation. The activity of daily living (ADL) data of the two groups of patients were compared, which were assessed based on the ADL scale, including 10 dimensions, including dressing, walking, bathing, etc. The occurrence of complications of the two groups was compared, including flexion contracture, adhesion and stiffness of the knee joint.

1.4. Statistical methods

SPSS 20.0 software was used for data analysis. The counting data were expressed in % and tested by χ^2 test, while the measurement data were expressed in $\bar{x} \pm s$ and tested by t test. The difference was statistically significant when $P < 0.05$.

2. Results

2.1 Comparison of knee joint function, range of motion (ROM) and activity of daily living (ADL) between the two groups (see Table 1)

Table 1. Comparison of knee joint function, range of motion (ROM) and activity of daily living (ADL) between the two groups ($\bar{x} \pm s$)

Group	Time	HSS (points)	ROM (°)	ADL
Control group	At discharge	55.53±6.48	88.75±7.95	65.63±3.36
	3 months after operation	68.20±6.11 ¹⁾	95.71±8.33 ¹⁾	71.09±2.11 ¹⁾
Observation group	At discharge	54.79±6.63	89.62±8.09	64.91±3.42
	3 months after operation	73.85±6.04 ¹⁾²⁾	108.21±8.90 ¹⁾²⁾	79.68±2.45 ¹⁾²⁾

Note: 1) $P < 0.05$ compared with that at discharge; 2) $P < 0.05$ compared with that 3 months after operation

2.2. Comparison of complication incidence between the two groups

In the observation group, 1 case of knee joint flexion contracture and 1 case of knee joint stiffness occurred, with a complication incidence of 5.13% (2/39); in the control group, there were 3 cases of knee flexion contracture, 2 cases of knee stiffness, 1 case of knee adhesion, 1 case of deep vein thrombosis, and 1 case of urinary system infection, with a complication incidence of 20.51% (8/39). The difference was statistically significant ($\chi^2=4.13$, $P=0.04$).

3. Discussion

TKA is the main treatment method for knee joint diseases, but the recovery time after surgery is long, combined with economic and other factors, patients usually choose out of hospital nursing. Lack of professional rehabilitation guidance will affect patients' exercise compliance and standard. Routine discharge guidance and out of hospital telephone follow-up can provide relevant knowledge and rehabilitation guidance to a certain extent, but due to time and form limitations, it is difficult to meet the out of hospital nursing needs of the patients [1,3].

The results of this study show that using WeChat as a tool for continuous nursing can better remind the patients to carry out rehabilitation training, adjust the training contents in real time according to patients' rehabilitation conditions, and accelerate the recovery speed. Publicizing relevant health knowledge through the official account improves the patients' awareness of disease. Compared with the single publicity and education guidance of traditional telephone follow-up, WeChat is not limited by time, region, and economy, and has the characteristics of convenient and fast communication, and the communication contents are more comprehensive and intuitive [2,3]. The group chat mode on the WeChat platform allows nurses and patients to communicate and interact, so that patients can still get professional guidance and assistance outside the hospital, which is conducive to establishing a closer nurse-patient relationship and improving exercise compliance; sharing rehabilitation knowledge and experience among patients through group chat can help establish rehabilitation confidence, improve exercise effect, and improve activity of daily living [2]. The results show that the complication incidence of the observation group was lower than that of the control group. It is suggested that with the timely information transmission of WeChat platform resources, the nursing staff can grasp the patients' rehabilitation conditions in real time, avoid the lag of traditional nursing mode, and ensure that patients can carry out systematic and scientific rehabilitation exercises by giving them standardized guidance and assistance, which is conducive to avoiding complications caused by wrong exercise methods, so as to improve the patients' rehabilitation exercise effect and accelerate the recovery of knee joint functions. However, some patients in the observation group still had knee stiffness and other complications, which were related to the individual differences of the patients and the fact that they failed to exercise in strict accordance with the rehabilitation training plan formulated by the nurses, but the overall complication rate was still lower than that of the control group, indicating that the continuous nursing based on WeChat platform is

more reliable.

To sum up, continuous nursing based on WeChat platform can promote early postoperative rehabilitation of TKA patients, reduce the incidence of complications, increase the range of motion of joints, and improve knee function and activity of daily living.

References

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