Original Article
Effect of comprehensive nursing on quality of life and nursing satisfaction in Parkinson's patients

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Abstract: Objective: The study is to carry out comprehensive nursing care for Parkinson's patients, and to explore the psychological state of patients, changes in the quality of life and patients' satisfaction with nursing services. Methods: 74 Parkinson's patients were randomly divided into intervention group and control group, with 37 cases in each group. The intervention group adopted comprehensive nursing intervention in the course of treatment, while the control group adopted routine nursing intervention in the course of treatment. The motor function, daily living ability, negative emotion, treatment compliance, non-motor complication rate, quality of life and nursing satisfaction were recorded and compared after 6 months of care. Results: There was no significant difference in scores of motor function between the two groups before nursing (P>0.05). The scores of motor function after nursing in both groups were lower than those before nursing, but the scores in intervention group were significantly lower than those in control group (P < 0.05), which indicated that comprehensive nursing intervention promotes motor function. There was no significant difference in the scores of daily living ability between the two groups before nursing (P>0.05), but the scores of daily living ability in intervention group were significantly higher than those in control group (P < 0.05), which indicated that comprehensive nursing intervention promotes the self-care ability. There was no significant difference in SAS and SDS scores between the two groups (P>0.05). The SAS and SDS scores of the intervention group were significantly better than those of the control group after 6 months of nursing (P < 0.05), which indicated that comprehensive nursing intervention improved emotional state more obviously. The total compliance of the intervention group was significantly higher than that of the control group (P < 0.05), which indicated that patients who received comprehensive nursing intervention have better coordination of treatment. The total incidence of non-motor complications of the intervention group was significantly lower than that of the control group (P < 0.05); the scores of the quality of life in the intervention group were significantly higher than those in the control group after 6 months of nursing (P < 0.05), which indicated that comprehensive nursing intervention improved quality of life more obviously. The nursing satisfaction of the intervention group was significantly higher than that of the control group (P < 0.05). Conclusion: Comprehensive nursing intervention can significantly improve patients' negative emotions, motor function, daily living ability and treatment compliance, and ultimately improve the quality of life of patients with Parkinson's disease, and improve patients' satisfaction with nursing. It is worth being promoted in clinical practice.

Keywords: Parkinson, comprehensive nursing, psychological state, quality of life, nursing satisfaction

Introduction

Parkinson's disease is a degenerative disease of the nervous system, which is also called tremor paralysis. The pathogenesis of Parkinson's disease is complex. However, some studies indicate that the main pathogenesis of Parkinson's disease is due to the pathological changes of dopamine in the midbrain [1, 2]. Parkinson predisposes to the elderly, and the incidence of Parkinson's disease increases with age [3]. At present, for the treatment of Parkinson's disease, due to the lack of specific drugs, symptomatic treatment is adopted in clinical to control symptoms. But this cannot prevent the further development of Parkinson's disease [4]. Dyskinesia is the main manifestation of Parkinson's disease, which is also one of the causes of serious impact on the quality of patients' life [5]. Parkinson's patients are mostly elderly people, and these people tend to be depressed and anxious by worrying about the cost of treatment. This also has a great impact on the quality of patients' life [6].

With the development of society and medical technology, the current routine nursing model has been unable to meet the needs of patients.

So, we are also looking for a more suitable clinical nursing model for Parkinson's patients [7]. Comprehensive nursing intervention is a kind of nursing mode that focuses on the patients' condition and solves it in time. At the same time, it can also focus on the patients' psychological state and improve the patients' negative emotions, thereby improving the patients' quality of life and nursing satisfaction [8]. Comprehensive nursing model has been applied in many diseases, such as in the study of perioperative nursing mode of ophthalmic surgery patients [9]. It was found that compared with traditional nursing model, comprehensive nursing intervention can significantly increase patients' comfort score and patient compliance. Other studies have found that the application of comprehensive nursing intervention in patients with aortic dissection can significantly improve the quality of life [10]. Studies [11] have shown that the application of reasonable nursing model in Parkinson's patients can improve the clinical symptoms and improve the quality of life. However, there are relatively few studies on the application of comprehensive nursing intervention in Parkinson's patients. In order to provide more theoretical basis for the choice of nursing model for Parkinson's patients, we explore the application of comprehensive nursing intervention in Parkinson's patients.

Materials and methods

General data

74 cases of Parkinson's disease in our hospital were selected, including 40 male and 34 female patients, with an average age of (72.1± 8.6) years. Patients were randomly divided into intervention group and control group, with 37 patients in each group. Intervention group adopted a comprehensive nursing intervention model in the course of treatment, and the control group used a routine nursing intervention model during the treatment.

Inclusion and exclusion criteria

Inclusion criteria: patients diagnosed as Parkinson's disease [12] and patients with stationary tremor symptoms [13] at the time of onset. Exclusion criteria: patients with severe liver and kidney dysfunction or combined with other tumors; patients with severe cardiopulmonary

dysfunction; patients with surgical contraindications; patients with coagulation dysfunction; patients with limb disabilities; patients with conscious or communication disorders; and non-cooperation patients. All patients and their families agreed to participate in the experiment and signed the informed consent. This experiment has been approved by Liaocheng Third People's Hospital Ethics Committee.

Nursing methods

The patients in the control group adopted the conventional nursing model. It cooperates with doctors to complete the treatment of patients and instructs patients to take medication on time and reasonably. Patients in the intervention group were treated with comprehensive nursing intervention, as follows: (1) Firstly, a comprehensive assessment of the patient's overall situation based on the patient's family, economic situation and lifestyle was made, and the reasonable care plan based on the results of the assessment was decided. (2) Medication guidelines: Parkinson's patients need a long-term medication, so the patients' medication guidance is especially important. The nursing staff should carefully explain the reasons for the medication, the importance of rational drug use, the role of the drug, and the possible adverse reactions to the patients and their families. To help patients form the habit of taking medicine correctly, the patient cannot add or subtract drugs during the medication. (3) Psychological nursing: Parkinson's patients are prone to negative emotions because they can't take care of themselves when they are ill. Therefore, nurses should pay close attention to the patients' psychological state all the time, actively communicate with patients and their families. Timely psychological counseling and psychological comfort should be given to patients when they have negative emotions. What is more, nurses should alleviate patients' negative emotions, help patients build up confidence to overcome diseases, and help patients maintain an optimistic attitude. (4) Sports guidance: Nurses should guide and help patients to do simple exercises, and massage patients' muscles and joints every day. It is good to promote patients' blood circulation and prevent patients from muscle stiffness and contracture. (5) Safety care for patients: As many Parkinson's patients have limb dyskinesia, and they also have the risk of swallowing difficulties,

Table 1. General information

	Test group n=37	Control group n=37	t/X²	P
Gender			0.218	0.641
Male	21 (56.76)	19 (51.35)		
Female	16 (43.24)	18 (48.65)		
Age (years)			0.060	0.806
≤70	24 (64.86)	25 (67.57)		
>70	13 (35.14)	12 (32.43)		
BMI (kg/m²)			0.056	0.814
≤22	22 (59.46)	21 (56.76)		
>22	15 (40.54)	16 (43.24)		
Drinking history			0.054	0.816
Yes	20 (54.05)	19 (51.35)		
No	17 (45.95)	18 (48.65)		
Hypertension			0.066	0.797
Yes	26 (70.27)	27 (72.97)		
No	11 (29.73)	10 (27.03)		
Diabetes			0.057	0.812
Yes	23 (62.16)	22 (59.46)		
NO	14 (37.84)	15 (40.54)		
Cultural level			0.056	0.813
Below high school	15 (40.54)	16 (43.24)		
High school and above	22 (59.46)	21 (56.76)		
Daily living ability	41.83±15.31	42.05±15.27	0.062	0.951
SAS	55.38±5.21	55.49±5.19	0.091	0.928
SDS	54.17±5.25	54.26±5.23	0.073	0.941
Course of disease (year)	6.51±5.37	6.52±5.36	0.008	0.994

falling and other incidents. We should pay attention to the needs of patients, and help patients finish part of their life needs. Nurses should also advise patients' family that patients must be accompanied by a person when they go to toilet. In the patient's range of activities, a guardrail should be installed. (6) Discharge nursing: After discharging from hospital, patients were given nursing guidance by We chat and telephone.

Outcome measures

(1) The Fugl-Meyer motor function scale (FMA) [14] was used to determine the motor function of patients before and after nursing for 6 months. The lower the score, the better the motor function rehabilitation function. (2) The Barthel index [15] was used to evaluate the daily living ability of the two groups. The higher the score, the better the daily living ability of the patients. (3) The negative emotions of the two groups after 6 months of nursing were scored, including SAS score and SDS score

[16]. (4) The patient's treatment compliance was evaluated based on the patient's compliance behavior. The results included: safety compliance, partial compliance, and non-compliance. Compliance rate = full compliance rate + partial compliance rate. (5) Incidence of non-motor complications during nursing: Complications included sensory disturbance, autonomic nervous dysfunction and personality changes. (6) QLQ-C30 quality of life scale [17] was used to evaluate the life quality of two groups after 6 months of nursing. (7) The nursing satisfaction of patients was evaluated by questionnaire survey at the end of nursing. Including three levels: very satisfied, satisfied and dissatisfied. Nursing satisfaction rate = very satisfied rate + satisfaction rate.

Statistical methods

In this experiment, SPSS 20.0 statistical software (Beijing Net Number Times Technology Co., Ltd.) was used for statistical analysis of the usage data. The count data was analyzed by chi-square test. The measurement data were compared by t test. The two groups were compared by independent t test. Paired t-test was used for intra-group comparison before and after treatment. P < 0.05 indicated that the difference was statistically significant.

Results

Baseline data

There was no significant difference in gender, age, negative emotion score, daily living ability, BMI and course of disease between the two groups (P>0.05), and the data were comparable (**Table 1**).

Comprehensive nursing improves motor function

The motor function of the patients was evaluated by Fugl-Meyer motor function score table.

Table 2. Comparison of motor function between two groups of patients before and after nursing

Time	Intervention group(n=37)	Control group (n=37)	t	P
Before treatment	80.98±5.76	81.03±5.82	0.037	0.971
Nursing for 6 months	66.31±5.55	74.81±5.44	6.653	< 0.001
t	9.16	4.749	-	-
P	< 0.001	< 0.001	-	-

Figure 1. Comparison of daily living ability between the two groups after 6 months. The scores of daily living ability of the intervention group were significantly higher than those of the control group (P < 0.05).

Figure 2. The negative emotional scores of the two groups after 6 months. The SAS score and SDS score of the intervention group were significantly better than those of the control group after 6 months and the difference was statistically significant (P < 0.05).

The motor function scores of the intervention group were (80.98±5.76) and (66.31±5.55), respectively. The motor function scores of the control group before and after treatment were (81.03±5.82) and (74.81±5.44). There was no significant difference in the motor function scores between the two groups before treatment (p < 0.05). The motor function scores of the two groups were lower than those before the nursing. But the scores of patients in the intervention group after nursing were significantly lower than those in the control group (P < 0.05), which indicated that the motor function of the intervention group was better than that of the control group after nursing (**Table 2**).

Comprehensive nursing improves daily living ability

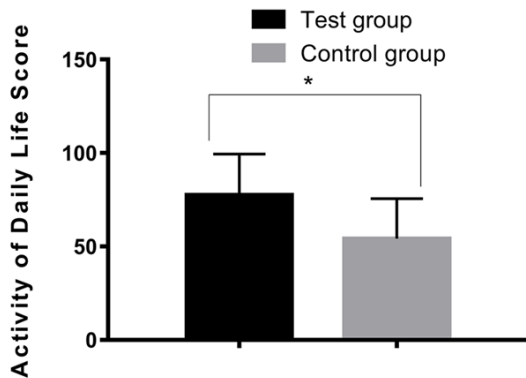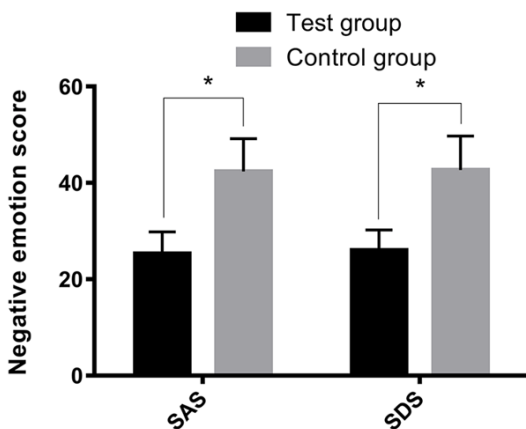The daily living ability score of the intervention group was (77.61±21.82) after 6 months, and the daily living ability score of the control group after 6 months was (54.19±21.35). The daily living ability score of the intervention group was significantly higher than in the control group after care (P < 0.05), which indicated that the self-care ability of the intervention group was better than that of the control group after treatment (**Figure 1**).

Comprehensive nursing improves negative sentiment

The SAS score and SDS score of the intervention group were (25.31±4.52) and (26.01± 4.19) after 6 months, respectively. The SAS score and SDS score of the control group after 6 months were (42.35±6.83) and (42.66± 7.06). The SAS score and SDS score of the intervention group were significantly lower than the control group after 6 months (P < 0.05), which indicated that the emotional state of the patients in the intervention group was better than that of the control group (**Figure 2**).

Comprehensive nursing improves treatment compliance

The total compliance, partial compliance, and non-compliance of the intervention group were 27, 9 and 1, respectively. The total compliance was 97.62%. The total compliance, partial compliance, and non-compliance were 17, 9 and 11 in the control group. The total compliance was 70.27%. The total compliance of the intervention group was significantly higher than that of the control group (P < 0.05) (**Table 3**).

Table 3. Comparison of treatment compliance between the two groups of patients

Project	Test group n=37	Control group n=37	X^2	P
Full compliance	27 (72.97)	17 (45.94)	5.606	< 0.050
Partial compliance	9 (24.32)	9 (24.32)	-	-
Not complying	1 (2.70)	11 (29.73)	9.946	< 0.050
Total compliance rate	36 (97.62)	26 (70.27)	9.946	< 0.050

Table 4. The incidence of non-exercise complications during care in both groups

Satisfaction level	Test group n=37	Control group n=37	X^2	P
Sensory disorder	2 (5.41)	5 (13.51)	1.420	0.233
Autonomic dysfunction	0	2 (5.41)	2.056	0.152
Personality change	1 (2.70)	3 (8.10)	1.057	0.034
Total incidence	3 (8.10)	10 (27.03)	4.573	< 0.050

Table 5. Comparison of quality of life scores between two groups of patients at discharge

Project	Test group n=37	Control group n=37	t	P
Role function	81.72±2.81	63.55±2.56	29.08	< 0.001
Emotional function	81.12±2.33	62.71±2.39	33.55	< 0.001
Physical function	81.96±2.23	61.93±2.71	34.72	< 0.001
Cognitive function	80.82±2.55	62.03±2.63	31.20	< 0.001
Social function	80.44±2.26	61.65±2.14	36.72	< 0.001

Table 6. Comparison of nursing satisfaction between the two groups of patients

Satisfaction level	Test group n=37	Control group n=37	X^2	P
Very satisfied	32 (86.49)	18 (48.65)	12.09	< 0.050
satisfied	4 (18.92)	7 (18.92)	0.961	0.327
Not satisfied	1 (2.70)	12 (32.43)	11.29	< 0.050
Nursing satisfaction rate	36 (97.30)	25 (67.57)	11.29	< 0.050

Comprehensive nursing reduces non-motor complication

In the intervention group, the number of patients with sensory disturbance, autonomic dysfunction and personality change were 2, 0 and 1, respectively. The total incidence of complications was 8.10%. The number of patients with sensory disturbance, autonomic dysfunction and personality change were 5, 2, and 3, respectively. The total incidence of complications was 27.03%. The total incidence of non-motor complications in the intervention group was significantly lower than that in the control group (P < 0.05) (**Table 4**).

Comprehensive nursing improves quality of life

The scores of role function, emotional function, somatic function, cognitive function and social function in the intervention group were (81.72+2.81), (81.12+2.33), (81.96+2.23), (80.82+2.55) and (80.44+2.26). The scores of role function, emotional function, somatic function, cognitive function and social function in the control group were (63.55±2.56), (62.71± 2.39), (61.93±2.71), (62.03±2.63) and (61.65±2.14). The scores of quality of life in the intervention group after 6 months were significantly higher than those in the control group (P < 0.05), which indicated that the quality of life of the patients in the intervention group was better than that of the control group (**Tables 5**, **6** and **Figure 3**).

Comprehensive nursing improves nursing satisfaction

The numbers of patients in the intervention group who were very satisfied, satisfied and unsatisfied with nursing were 32, 4 and 1, respectively, the nursing satisfaction was 97.30%. The numbers of patients in the control group who were very satisfied, satisfied and unsatisfied with nursing were 18, 7 and 12, respectively, and the nursing satisfaction was 67.57%. The nursing satisfaction of patients in the intervention group was significantly higher than that of the control group (P < 0.05) (**Table 6**).

Discussion

Parkinson's disease is a neurologically impaired disease, and its main clinical manifestations are tremor and dyskinesia [18]. Parkinson's dis-
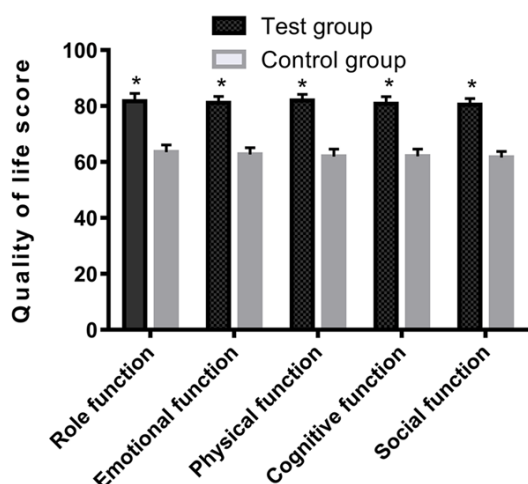
Figure 3. Comparison of life quality between the two groups before and after treatment. The scores of life quality in the intervention group were significantly higher than those of the control group after 6 months and the difference was statistically significant (P < 0.05).

ease has a serious impact on patients' quality of life and exercise capacity. There may be life-threatening for patients [19]. At present, there is no research on the mechanism of Parkinson's disease. The pathological changes are mainly caused by metabolic disorders of dopamine in the body [20]. There are no clinically specific drugs for the treatment of Parkinson and most patients require life-long treatment [21].

Although drug treatment can improve the patient's condition, there is no way to stop the patient's condition from progressing [22]. As the disease progresses, the patient's motor function and daily living ability will gradually appear to loss and eventually lead to systemic stiffness [23]. Long-term medications and their symptoms and mental status reduce the quality of life and increase negative emotions [24]. Previous studies [25] have shown that systematic and comprehensive care for patients with Parkinson's disease can stabilize the patient's condition and reduce non-motor complications. Therefore, for Parkinson's patients, except for the treatment, nursing is also an aspect that cannot be ignored.

We applied the comprehensive nursing model to patients with Parkinson's disease, and we comprehensively treated the patients in the intervention group from the aspects of medica-

tion, psychology, exercise and safety. The motor function, daily living ability, negative emotion, treatment compliance, incidence of non-motor complications, quality of life and nursing satisfaction were recorded and compared with those of the control group after 6 months. The results showed that the motor function score, daily living ability index, treatment compliance, quality of life score and nursing satisfaction of the intervention group were significantly higher than those of the control group after 6 months. While the negative emotional score and the incidence of non-motor complications were significantly lower than those of the control group. In recent years, comprehensive nursing model is gradually popularized in clinic. Good results have been achieved in many diseases such as gastric cancer [26], hypertension [27], and coronary heart disease [28]. For example, studies [29] showed that comprehensive nursing can effectively reduce the negative emotions of patients with cervical cancer. Studies [30] found that comprehensive nursing intervention can improve the life quality of patients with acute cerebral infarction. Although there are not many applications of comprehensive nursing in Parkinson's patients at present, the above studies can confirm our conclusions. In our study, comprehensive nursing plan is formulated according to the specific conditions of patients. According to the psychological pressure of patients, we encourage and counsel the patients to alleviate their bad mood. Through explaining the disease to the patients, the patients can establish a correct understanding of the disease, which was suspected to be the reason for the improvement of treatment compliance of patients in the intervention group. They can also help the patients recover their limb motor function through exercise. After discharge, they also take certain measures to care for the patients. In this way, the integrity of the entire nursing process is completed, and the rehabilitation of the patient is promoted. What is more, the quality of life is improved and there is a high satisfaction of the nursing.

In summary, comprehensive nursing intervention can significantly improve the negative emotions of patients, improve their motor function, daily living ability and treatment compliance. It can ultimately improve the quality of life and improve their satisfaction of the nursing. However, in our study, we did not compare the dif-

ferent nursing models and could not judge the most suitable nursing model for Parkinson's patients. In the future research, we will explore different nursing models of Parkinson's patients, and hope that majority of scholars can provide more data for the care of Parkinson's patients.

Disclosure of conflict of interest

None.

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