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Application Research of Detailed Nursing of Tuberculous Meningitis Patients

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Abstract: *Objective:* To explore the application effect of detailed nursing in tuberculous meningitis nursing. *Methods:* A total of 52 patients with tuberculous meningitis who were admitted to our hospital from May 2019 to February 2022 were selected as the research objects, and divided into 25 patients in the control group and 27 patients in the study group according to the random table method, and the compliance, quality of life, recurrence, nursing satisfaction, depression, anxiety and PSQI scores of the two groups were observed and analyzed. *Results:* In the study group, the number of patients with complete compliance, partial compliance and non-compliance were 13, 11 and 3, respectively, and the compliance rate was 88.89%. In the control group, the number of patients with complete compliance, partial compliance and non-compliance were 11, 5 and 9, respectively, and the compliance rate was 67.86 %, and $P < 0.05$ was considered statistically significant. The quality-of-life score of the control group was 48.36 ± 2.24, which was lower than that of the study group, 50.23 ± 2.12, ($P < 0.05$). The rate of recurrence of the control group was 36.00%, which was significantly higher than 7.41% in the study group ($P < 0.05$). There was no significant statistical difference between the SAS, SDS, and PSQI scores of the two groups before nursing, ($P > 0.05$). After nursing, both groups showed a decrease in SDS and SAS scores, with the study group showing significantly lower scores than the control group ($P < 0.001$). Besides, the PSQI dimension scores and total score in the study group were lower than those in the control group ($P < 0.001$). Moreover, the nursing satisfaction of the patients in the study group was significantly higher than that in the control group (93.02% > 71.79%), ($P < 0.05$). *Conclusion:* A full range of detailed care is not only helpful for accurate diagnosis and treatment of patients, but also helps to create a satisfactory hospital environment for patients. Results from this study showed that detailed nursing care for patients with tuberculous meningitis shows a significant positive effect and should be applied in clinical practices.

Keywords: Tuberculous meningitis; Detailed nursing; Application

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1. Introduction

Tuberculous meningitis is an inflammatory lesion caused by the erosion of the meninges of the patient by Mycobacterium tuberculosis [1]. It is mainly manifested as general weakness, lack of energy, low fever and night sweats, and more. At the same time, it will also affect the patient's arachnoid, pia mater, brain tissue and nervous system, causing serious damage and affecting the patient's physical health, life safety and quality of life [2,3]. The disease has the characteristics of acute onset, severe disease and rapid change of disease, and has a high fatality and disability rate. It is of great clinical significance to improve the success rate of treatment and the prognosis by giving effective nursing intervention during active treatment [4]. the clinical application effect of detailed nursing in the nursing of tuberculous meningitis will be discussed in

this paper.

2. Materials and methods

2.1. General information

A total of 52 patients with tuberculous meningitis admitted to our hospital from May 2019 to February 2022 were selected as the research objects and divided into control group and study group according to the random table method. Among them, there were 25 patients in the control group, with an average age of 36.15 ± 11.88 years old, were given routine clinical nursing management; 27 patients in the research group, with an average age of 36.29 ± 12.12 years old, were given detailed nursing care during the treatment period. There was no significant difference in general data between the two groups, $P > 0.05$, the study was approved by the hospital ethics committee to implement.

2.2. Methods

The control group received routine nursing care, which mainly includes the following: monitoring the condition and changes of vital signs, giving symptomatic treatment and basic nursing care according to doctor's orders, conducting psychological stress relief and health education, and guiding patients to adopt a reasonable diet and lifestyle. The study group adopted the detailed nursing care, the specific contents are as follows:

2.2.1. Risk assessment and management

After patients were admitted to the hospital, their conditions and comprehensive situations were promptly analyzed. The existing nursing problems were accurately assessed and suitable nursing plans were formulated. Besides, a targeted prevention and disposal plan for possible risks for each patient was formulated, the responsibilities of nursing jobs were outlined, the head nurse was responsible for supervising the implementation of the nursing plan, and timely coordinating and solving problems in the nursing process.

2.2.2. Strengthen psychological and health education and nursing

Active communications should be carried out with patients in order to grasp their real thoughts and psychological dynamics in a timely manner. Care was expressed along with greetings with kind, gentle words and body language in order to build rapport with the patients. The emotions of the patients were taken care of, encouragement was given to them to establish self-confidence in treating diseases, and help was given to patients to actively cooperate with treatment and nursing to ensure early recovery. The causes of the disease, treatment methods and related precautions were explained to patients and their families, with emphasis on various possible complications and countermeasures. Difficult questions raised by patients were also answered to eliminate any worries and doubts, and enhance their understanding of and compliance to treatment and care.

2.2.3. Optimize basic nursing measures

Symptomatic drugs were given to patients according to prescription, the patient’s condition and vital signs were monitored, and the doctor was notified for disposal if any abnormality was found, so as to prevent the further development and deterioration of the disease. When the patient is in a coma, his head can be turned to one side to prevent suffocation caused by aspiration of vomitus, and the sputum and secretions in the respiratory tract can be removed in time to keep the respiratory tract unobstructed and prevent the occurrence of lung infection. Aseptic operation standards were strictly followed, and the “three checks and seven pairs” operation procedures were strictly abided by to prevent adverse events.

2.2.4. Strengthen pipeline care

The indwelling pipelines were clearly marked, indicating the type of pipeline, the time of use and the patient's name, and so on to prevent confusion caused by too many pipelines, and improve the safety and effectiveness of pipeline use. Monitoring of the pipes' conditions was necessary to ensure no twists, falls and other adverse situations, and the pipes were regularly cleaned, disinfected and replaced.

2.2.5. Refinement of pressure ulcer care

The patients were regularly turned over and cleaned, and the skin of the pressured area was regularly massaged and kept clean and dry to improve blood circulation, and prevent skin integrity damage such as pressure ulcers.

2.3. Observation indicators

The medical compliance behavior, quality of life, recurrence, nursing satisfaction, depression, anxiety scores and PSQI scores of the two groups were observed and analyzed.

2.4. Statistical methods

SPSS 25.0 statistical software was used to analyze the data, and the count and measurement data were expressed as n/%, $\bar{x} \pm s$, and χ^2 and t test were performed. $P < 0.05$ was considered statistically significant.

3. Results

3.1. Comparison of medical compliance behavior between the two groups of patients

In the two groups, the number of patients with full compliance, partial compliance and non-compliance in the study group were 13, 11 and 3, respectively, and the compliance rate was 88.89%, while the number of patients with full compliance, partial compliance and non-compliance in the control group were 11, 5 and 9, respectively, and the compliance rate was 67.86%, $P < 0.05$ which was considered statistically significant.

Table 1. Comparison of medical compliance behavior of two groups of patients

Group	Full compliance	Partial compliance	Non-compliance	Compliance rate
Control group (n = 25)	11 (44.00)	5 (20.00)	9 (36.00)	16 (64.00)
Study group (n = 27)	13 (48.15)	11 (40.74)	3 (11.11)	24 (88.89)
χ^2				4.5298
P				0.0333

3.2. Quality of life and recurrence of patients in the two groups

The quality-of-life score of the control group was 48.36 ± 2.24, which was lower than that of the study group (50.23 ± 2.12), which was considered statistically significant with $P < 0.05$. The recurrence rate of the control group was 36.00%, which was significantly higher than that of the study group 7.41%, and $P < 0.05$ was considered statistically significant.

Table 2. Comparison of quality-of-life scores and recurrence

Group	Quality of life (points)	Recurrence (%)
Control group (n = 25)	48.36 ± 2.24	9 (36.00)
Study Group (n = 27)	50.23 ± 2.12	2 (7.41)
T/χ^2	3.0928	6.3626
P	0.0032	0.0117

3.3. Comparison of SAS and SDS scores between the two groups before and after nursing

The SAS and SDS scores of the two groups before and after nursing were compared, and there was no significant difference between the two groups before nursing ($P > 0.05$). After nursing, the scores of SDS and SAS in the two groups were lower than those before nursing, and the comparison between groups showed that the study group was slightly lower than the control group, and the difference was statistically significant ($P < 0.001$), as shown in **Table 3**.

Table 3. Comparison of SAS and SDS scores before and after nursing in the two groups (points, $\bar{x} \pm s$)

Group	SAS				SDS			
	Before nursing	After nursing	T	P	Before nursing	After nursing	T	P
Control group (n = 25)	74.88 ± 5.52	51.63 ± 5.28	15.2187	0.0000	73.06 ± 6.82	52.34 ± 4.73	12.4824	0.0000
Study group (n = 27)	75.01 ± 5.48	42.33 ± 3.95	25.1377	0.0000	72.67 ± 6.67	43.92 ± 4.72	18.2826	0.0000
t	0.0852	7.2271			0.2084	6.4206		
P	0.9325	0.0000			0.8358	0.0000		

3.4. Comparison of nursing satisfaction of the two groups of children

By observing the nursing satisfaction of the two groups, the nursing satisfaction of the patients in the research group was significantly higher than that in the control group (93.02% > 71.79 %).

Table 4. Comparison of nursing satisfaction of two groups of patients (n, %)

Group	Very satisfied	Satisfied	Dissatisfied	Satisfaction
Control group (n = 25)	7 (28.00)	11 (44.00)	7 (28.00)	18 (72.00)
Study group (n = 27)	18 (66.67)	8 (29.62)	1 (3.70)	26 (96.29)
χ^2				4.1679
P				0.0412

3.5. Comparison of PSQI scores between the two groups before and after nursing

Comparing the scores of each dimension of PSQI between the two groups before and after nursing, there was no significant difference between the two groups before nursing (P >0.05). See **Table 5**.

Table 5. Comparison of PSQI scores before and after nursing in the two groups (points, $\bar{x} \pm s$)

		Control group (n = 25)	Study group (n = 27)	t	p
Sleep quality	Before nursing	2.08±0.49	2.04±0.47	0.3004	0.7651
	After nursing	1.45±0.35	0.91±0.15	7.3274	0.0000
Sleeping time	Before nursing	2.00±0.20	2.00±0.29	0.0000	1.0000
	After nursing	1.32±0.34	0.95±0.20	4.8264	0.0000
Sleep efficiency	Before nursing	2.32±0.25	2.31±0.23	0.1502	0.8812
	After nursing	1.63±0.33	1.22±0.20	5.4646	0.0000
Sleep disorder	Before nursing	1.91±0.33	1.88±0.38	0.3029	0.7632
	After nursing	1.46±0.24	1.02±0.16	7.8329	0.0000
Hypnotic drugs	Before nursing	1.83±0.44	1.84±0.43	0.0829	0.9343
	After nursing	1.30 ± 0.32	0.62 ± 0.18	9.5365	0.0000
Total PSQI score	Before nursing	10.14 ± 1.6	10.07 ± 1.97	0.1545	0.8778
	After nursing	7.16 ± 1.58	4.72 ± 0.89	6.9280	0.0000

4. Discussion

Tuberculous meningitis is a non-suppurative disease of the meninges caused by Mycobacterium tuberculosis infection. The nervous system will very likely be affected due to the rapid change of the disease, affecting the patient's sensory and motor involvement, and then affecting the patient's health, quality of life, possibly fatal. In the past, routine nursing care focuses more on the implementation of the patient's doctor's orders, while the discovery, induction, summary and disposal of the details of the patient's condition, clinical symptoms, hospitalization mentality and other aspects were lagging behind. It directly affected the timely and effective treatment of patients with tuberculous meningitis [5-8]. Detailed nursing is patient-centered. It also adheres to the core concept that details determine success or failure, and attitude determines everything, continuously improve the quality of clinical nursing through multi-dimensional, and formulate targeted intervention measures according to the characteristics of patients. The nursing plan needs to be individualized and professional. Pertinence and timeliness is key to ensure that patients' physical, psychological and social needs are fully met, improve their treatment compliance and avoid unnecessary medical disputes and conflicts [9-13].

Due to the many symptoms of tuberculous meningitis and the lack of knowledge of the disease, patients are prone to have negative emotions, which will affect treatment compliance and ultimately lead to poor treatment effects. Therefore, careful and thoughtful nursing intervention must be taken during the treatment of such patients to enhance the therapeutic effect and improve the clinical prognosis. When caring for patients with tuberculous meningitis, routine nursing focuses too much on the prevention of intracranial complications, cross-infection, and compliance with medication, with insufficient implementation of details and insufficient attention to the psychological needs of patients, resulting in a high incidence of early complications [14]. Detailed nursing meets the needs of modern nursing forms, and is a humanized nursing model that can improve the quality of nursing services, provide patients with high-quality nursing services, and meet the psychological and physical needs of patients [15-16], so as to obtain an ideal prognosis.

Personalized detailed nursing can reduce potential safety hazard, improve various factors affecting the safety of nursing under control, improve the monitoring of disease, provide timely feedback to the doctors to ensure patients are in stable conditions, reduce the complications or avoid illness development according to the periods and needs of different diseases with meticulous care .

5. Conclusion

In conclusion, comprehensive detailed care not only contributes to accurate diagnosis and treatment of patients, but also helps to create a satisfactory hospitalization environment for patients. Therefore, detailed nursing care for patients with tuberculous meningitis in clinical practice is significantly more effective. It has high application value should be practiced in clinical nursing.

Disclosure statement

The authors declare no conflict of interest.

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