

Effects of comprehensive nursing intervention on the quality of life and prognosis of patients with smear-positive tuberculosis.

Yan-Yan Liu¹, Hong-Mei Zhao², Zhao-Xia Zhang^{3*}

¹School of Medicine of Xuchang University, Xuchang, PR China

²Internal Medicine Department, the People's Hospital of Tongchuan, Tongchuan, PR China

³Internal Medicine Department, South Hospital of Tongchuan Municipal People's Hospital, Tongchuan, PR China

Abstract

Objective: This study aimed to investigate the effects of comprehensive nursing intervention on the quality of life and prognosis of patients with smear-positive tuberculosis.

Method: A total of 80 patients with smear-positive tuberculosis who were previously admitted to our hospital over the period of from January 2015 to October 2015 were recruited and randomly divided into the control and experimental groups. The control group received conventional nursing intervention, whereas the experimental group received comprehensive nursing intervention. The effects of nursing intervention on the quality of life and prognosis of the patients in the two groups were compared.

Results: The mini-mental state examination scores (28.92 ± 6.04), mental function scores (65.8 ± 9.2), and social function scores (57.2 ± 6.5) of the patients in the experimental group were significantly higher ($P < 0.05$) than those of the patients in the control group. However, the activities of daily living scores (38.04 ± 3.02) of the experimental group was significantly lower than that of the control group ($P < 0.05$). After nursing intervention, the experimental group had significantly better arterial blood gases indexes, including PaO_2 (72.39 ± 2.72), PaCO_2 (36.23 ± 3.85), and SpO_2 (94.36 ± 3.28), than the control group. The incidence of complications and recurrence rate of the experimental group are 7.5% and 10%, respectively, and are significantly lower ($P < 0.05$) than those of the control group (17.5% and 15%; $P < 0.05$).

Conclusions: Comprehensive nursing intervention provides an ideal treatment effect to patients with smear-positive tuberculosis. It can improve the living quality and prognosis of patients and is thus worthy of wide application.

Keywords: Comprehensive nursing intervention, Smear-positive tuberculosis, Living quality, Prognosis.

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Introduction

Smear-positive tuberculosis is a common clinical disease with a high incidence, long duration, and poor treatment response. Most patients find adhering to regular treatment difficult. Moreover, the lack of ideal nursing methods for this disease worsens the prognosis of some patients, who thus suffer from poor quality of life and even lose their capacity to work [1,2]. Comprehensive nursing intervention was recently applied during the treatment of patients with smear-positive tuberculosis and achieved an ideal effect. This nursing mode reflects a patient-oriented philosophy that aims to effectively improve the living quality and promote the early recovery of patients [3,4]. In the present study, we analysed the clinical data of 80 patients with smear-positive tuberculosis admitted to our hospital over the period of January 2015 to October 2015 to determine the effects of comprehensive nursing intervention on the quality of life and prognosis of patients with smear-

positive tuberculosis. We provide a discussion of our results in the following sections.

Data and Methods

General data

We recruited 80 patients with smear-positive tuberculosis and who were previously admitted to our hospital over the period of January 2015 to October 2015. We randomly assigned the recruited patients to the control and experimental groups. The experimental group comprised 40 patients, including 24 males and 16 females aged 13.4 y to 76.9 y with an average age of 45.7 ± 2.0 y. The control group comprised 40 cases, including 20 males and 20 females aged 14.2 y to 75.4 y with an average age of 47.4 ± 2.4 y. The diagnoses of all respondents conformed to the clinical diagnostic standard for smear-positive tuberculosis. The patients were diagnosed through

chest X-ray, CT, and sputum smear examination. The patients and their family members were informed of the treatment methods and nursing measures and provided signed written informed consent. The genders and ages of the patients in the two groups were not significantly different ($P>0.05$), indicating comparability.

Method

The control group received conventional nursing intervention, including: 1) Strengthening the related knowledge of the patients of smear-positive tuberculosis on the basis of the clinical symptoms and disease history of the patients; 2) Providing patients with intervention manuals; and 3) Informing patients about impending treatment methods to increase the treatment compliance of patients.

The experimental group received comprehensive nursing intervention, including: 1) Mental nursing. Nurses formulated detailed a mental nursing plan for each patient. They communicated with the patients with a warm attitude and good language. This intervention aimed to improve the treatment compliance of the patients by eliminating their negative emotions and helping them feel confident about defeating the disease. 2) Health education. Nurses enhanced the patients' accessibility and comprehensibility of knowledge, including pathogenesis, transmission route, and therapy options, related to smear-positive tuberculosis. In addition, the nurses guided the patients on adhering to pharmaceutical interventions in accordance with individual treatment. They also guided the patients on developing good living habits. The nurses also regularly reexamined the routine blood, liver, and kidney parameters of the patients during treatment. 3) Family support and standard management. The nurses showed concern about the lives and work of the patients. They also encouraged the family members of the patients to help the patients accomplish treatment. The nurses enhanced the standard management of patients. To improve the autoimmunity of the patients, the nurses also focused on the personal hygiene of the patients and encouraged sanitation and infection control in the family environment. 4) Discharge instruction. Nurses provided appropriate instructions to discharged patients. Nurses advised the patients to stop smoking and drinking alcohol and to maintain a healthy diet to promote recovery.

Observation indexes

The quality of life of the patients in the two groups was evaluated through the Mini-Mental State Examination (MMSE) and Activities of Daily Living (ADL). The prognoses of the patients in the two groups were observed.

Statistical analysis

Collected data were analysed by SPSS18.0. Normally distributed data were analysed through one-way analysis of variance. Statistically different data were subjected to pairwise comparison using the LSD method. $P<0.05$ indicated statistical difference between data.

Results

Comparison of the quality of life of the patients after nursing intervention

The MMSE, mental function, and social function scores of the experimental group are 28.92 ± 6.04 , 65.8 ± 9.2 , and 57.2 ± 6.5 , respectively, and are significantly higher than those of the control group ($P<0.05$). The ADL score of the experimental group is 38.04 ± 3.02 , which is significantly lower than that of the control group ($P<0.05$) (Table 1).

Table 1. Quality of life of patients in the control and experimental groups ($\bar{x} \pm s$, scores).

Group	ADL	MMSE	Mental function	Social function
Experimental group (n=40)	38.04 ± 3.02	28.92 ± 6.04	65.8 ± 9.2	57.2 ± 6.5
Control group (n=40)	45.72 ± 3.14	23.51 ± 5.20	56.7 ± 8.4	51.1 ± 6.0
t	16.32	15.78	15.55	12.31
P	<0.05	<0.05	<0.05	<0.01

Comparison of the ABG indexes of the patients after nursing intervention

The PaO_2 (72.39 ± 2.72), PaCO_2 (36.23 ± 3.85), and SpO_2 (94.36 ± 3.28) of the experimental group are significantly higher than those of the control group ($P<0.05$). Details are provided in Table 2.

Table 2. ABG indexes of patients in the experimental and control groups after nursing intervention.

Groups	PaO_2	PaCO_2	SpO_2
Experimental group (n=40)	72.39 ± 2.72	36.23 ± 3.85	94.36 ± 3.28
Control group (n=40)	60.83 ± 2.48	46.03 ± 4.47	85.61 ± 2.49
t	21.758	11.509	14.721
P	0	0	0

Comparison of prognosis of the patients after nursing intervention

The incidence of complications and recurrence rates of the patients in the experimental group are 7.5% and 10%, respectively. These values are significantly lower than those of the patients in the control group (17.5% and 15%; $P<0.05$). Details are provided in Table 3.

Table 3. Prognosis of the patients in the experimental and control groups.

Groups	Cases	Complications	Recurrence rate
Experimental group	40	3 (7.5)	4 (10)

Control group	40	7 (17.5)	6 (15)
χ^2	/	6.44	7.29
P	/	<0.05	<0.05

Discussion

Tuberculosis is a common respiratory disease. Patients with active tuberculosis (active tuberculosis symptoms and positive sputum and X-ray results) are often treated with isoniazide and rifampicin. The changes and development of the disease not only will influence clinical therapeutic effect but also will affect the living quality of patients on multiple aspects, such as mental health and social interaction [5]. Patients who lack a complete understanding of tuberculosis feel self-abased and anxious because of their fear that the disease will influence their work and lives. In addition, given its infectiousness, tuberculosis requires isolated treatment. Family members and friends are not allowed to come into close contact with the patients, thus causing patients to feel isolated [6]. Patients will become nervous and even fear the occurrence of hemoptysis. Therefore, patients with tuberculosis should receive specific clinical nursing intervention. They should be informed that the success of tuberculosis treatment is dependent on patient compliance. Inadequate treatment can lead to the recurrence of the disease and the development of drug-resistant Mycobacterium tuberculosis, which will hamper treatment progress and encourage the occurrence of complications. Thus, the positive cooperation of patients during treatment is necessary [7,8].

Comprehensive nursing intervention, which is based on a patient-oriented philosophy, has been used to treat patients with smear-positive tuberculosis with an ideal effect. It has various advantages compared with other nursing modes [9]. This nursing technique improves the quality of life of patients by increasing their understanding of tuberculosis and facilitating their adherence to pharmaceutical treatment. Nurses constantly remind and urge patients to follow medical advice, thus decreasing recurrence rate. Moreover, nurses provide patients with systematic and comprehensive health education. Thus, patients become highly aware of the importance of pharmaceutical treatment. Comprehensive nursing intervention can be customized in accordance with the culture, career, and psychological states of each patient and can integrate the support of the patient's family and social network [10]. The results of the present study demonstrated that the experimental group has significantly higher MMSE, mental function, and social function scores after comprehensive nursing intervention than the control group ($P < 0.05$). Moreover, the ABG indexes (PaO_2 , PaCO_2 , and SpO_2) of the experimental group are significantly better than those of the control group ($P < 0.05$). However, the ADL score of the experimental group is far lower than that of the control group ($P < 0.05$). The incidence of complications and recurrence rate of the experimental group are 7.5% and 10%, respectively, and are far lower than those of the control group (17.5% and 15%) ($P < 0.05$).

Conclusion

Comprehensive nursing intervention exerts an ideal therapeutic effect on patients with smear-positive tuberculosis. It is worthy of wide applications given that it improves the living quality and prognosis of patients with smear-positive tuberculosis.

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*Correspondence to

Zhao-Xia Zhang

Internal Medicine Department

South Hospital of Tongchuan Municipal People's Hospital

PR China