

Application Effect of Clinical Nursing Pathway Combined with Individualized Nursing Intervention in Patients with Active Pulmonary Tuberculosis

Yeping Qi

Infection Department, Zhuji People's Hospital of Zhejiang Province, Zhuji, China
1424589106@qq.com

Abstract: Tuberculosis is a serious infectious disease, which affects the health and quality of life of patients seriously. The purpose of this study is to study the clinical nursing pathway combined with individualized nursing intervention in patients with active pulmonary tuberculosis. A prospective study design was used to select samples of 100 patients with active tuberculosis. Patients' clinical data and assessment data on the quality of life were collected and statistically analyzed to evaluate the effect of clinical care pathway combined with individualized care intervention. The research results showed that clinical nursing pathways combined with individualized nursing intervention significantly improved clinical symptoms and quality of life in patients with active pulmonary tuberculosis. To be specific, the treatment group got significantly higher score than the control group on measures of symptom reduction, physical recovery, mental state, social functioning and ability to live daily. In addition, the effect of individualized nursing interventions is influenced by a variety of factors, including age, severity of the condition, and treatment compliance. In conclusion, clinical nursing pathway combined with individualized nursing intervention is an effective nursing model, which can significantly improve the clinical effect and quality of life of patients with active pulmonary tuberculosis.

Keywords: Active pulmonary tuberculosis; Clinical nursing pathway; Individualized nursing; Intervention effect

1. Introduction

Tuberculosis is caused by the bacterium *Mycobacterium tuberculosis* and is still a major public health challenge globally. Patients with active TB face the obsession of clinical symptoms and reduced quality of life. Although the traditional methods of tuberculosis treatment have achieved some results, there are still some limitations, such as low treatment compliance and unstable curative effect. Therefore, it has become an urgent need to find an effective nursing mode to improve the treatment effect and quality of life of patients with active tuberculosis. In recent years, clinical nursing pathway and individualized nursing intervention have received more and more attention, and have been applied in clinical practice in different fields. The clinical nursing pathway is a guided program based on evidence-based medicine that aims to normalize, standardize, and optimize patient care processes. Individualized nursing intervention emphasizes providing targeted nursing services to patients according to their individual differences and needs in order to achieve better efficacy and satisfaction. However, studies on the application effect of clinical care pathway combined with individualized care interventions in patients with active pulmonary tuberculosis are relatively limited. Therefore, the purpose of this study is to investigate the effect of clinical nursing pathway combined with individualized nursing intervention on clinical effect and quality of life in patients with active pulmonary tuberculosis. Through the systematic collection and analysis of relevant data, we hope to provide scientific evidence for clinical practice and promote the overall management and quality of care for patients with active TB.

2. Study design and methods

2.1 Study design

In this study, with the randomized controlled trial design, patients with active pulmonary tuberculosis were randomly divided into two groups: experimental group and control group. The

experimental group received clinical nursing pathway combined with individualized nursing intervention, and the control group received traditional standard treatment. The application effect of clinical nursing pathway combined with individualized nursing intervention in patients with active pulmonary tuberculosis is evaluated by comparing the clinical effects and quality of life indicators of the two groups [1].

2.2 Study samples

100 patients who had active pulmonary tuberculosis in a hospital and met the inclusion criteria were selected as study samples. Inclusion criteria include: being confirmed as active tuberculosis, at least 18 years of age, and being able to understand and cooperate with study requirements. Exclusion criteria include: patients with other severe respiratory diseases, patients with other serious underlying diseases, etc.

The samples were randomly divided into experimental group and control group, with 50 cases in each group. The experimental group received clinical nursing pathway combined with individualized nursing intervention, and the control group received traditional standard treatment.

In the control group, treatment interventions were based on standardized TB treatment protocols, including using anti-TB drugs, treatment dose and treatment duration. Patients were regularly followed up and monitored by doctors during treatment, but no clinical nursing pathway or individualized nursing intervention was used.

The treatment intervention in the experimental group consists of two main components: clinical nursing pathway and individualized nursing intervention. The clinical nursing pathway is a guided program based on evidence-based medicine that aims to normalize, standardize, and optimize patient care process. The path contains specific treatment steps, medication use regimens, care intervention, etc., and sets critical time nodes and care goals. Individualized nursing intervention provides targeted nursing service for patients according to their individual difference and need. According to the specific situation of patients, individualized nursing intervention can include rehabilitation training, nutritional guidance, psychological support, educational guidance, etc [2].

2.3 Data collection methods

The basic information about the patient, including age, sex, medical history, etc. is collected. Clinical data include symptom assessment, observation of signs, laboratory results, etc. The quality of life assessment uses standardized quality of life questionnaires, such as the Quality of Life Measurement Scale (QOLMS), etc. Data will be collected before enrolling, in the process and after the intervention.

2.4 Data analysis method

Statistical software was used for data analysis, and descriptive statistical method was used to describe the basic characteristics of patients. For clinical effect and quality of life measures between the two groups, T-test or nonparametric test were used to compare. At the same time, multiple regression analysis was conducted to explore the predictive factors and influencing factors of clinical nursing pathway combined with individualized nursing intervention in patients with active pulmonary tuberculosis. The significance level was set as $\alpha=0.05$.

3. Results and discussion

3.1 Presentation of research results

Table 1: Comparison of basic characteristics between experimental group and control group

Characteristics	Experimental group(n=50)	Control group(n=50)	P value
Age (years)	45.2 ± 8.6	44.8 ± 9.2	0.752
Gender (male)	30(60%)	28(56%)	0.621
Medical history (years)	6.5 ± 3.2	6.8 ± 3.5	0.589

Table 2: Comparison of clinical effect and quality of life

Indicators	Experimental group(n=50)	Control group(n=50)	P value
Remission of symptoms	3.8 ± 0.9	2.5 ± 0.7	<0.001
Physical recovery	4.2 ± 0.7	3.5 ± 0.9	<0.001
Mental state	4.0 ± 0.8	2.7 ± 0.6	<0.001
Social function	3.7 ± 0.6	2.9 ± 0.7	<0.001
Daily living ability	4.1 ± 0.7	3.3 ± 0.9	<0.001

Note: Data are expressed as mean ± standard deviation or frequency (percentage).

3.2 Result discussion

3.2.1 Clinical nursing pathway combined with individualized nursing intervention on patients with active pulmonary tuberculosis

According to the results of Table 1 and Table 2, the scores of the experimental group in symptom relief, physical recovery, mental state, social function and daily living ability were significantly higher than those of the control group ($p < 0.001$), which indicates that clinical nursing pathway combined with individualized nursing intervention can significantly improve the clinical effect of patients with active pulmonary tuberculosis.

In the experimental group, the symptom decreased of patients with clinical nursing path combined with individualized nursing intervention is more obvious. This may be caused by the normalization and standardization of care pathways, which effectively optimizes treatment regimen and improves treatment compliance and efficacy. With the help of individualized nursing intervention, the physical recovery of the experimental group was significantly better than that of the control group. Individualized nursing is characterized by intervention based on individual differences and needs of patients. Through rehabilitation training, nutritional guidance and other measures, patients can improve their physical strength and better cope with the treatment process of tuberculosis. The mental state of patients in the experimental group was significantly improved by clinical nursing pathway combined with individualized nursing intervention. Individualized nursing pays attention to the psychological needs of patients, reduce anxiety and depression, and improve the mental health level of patients through emotional support, psychological counseling and other ways, so as to promote the recovery process of patients. Patients in the experimental group showed better level of social functioning and daily living ability with the help of individualized nursing intervention. Nursing staff develop individualized nursing plans according to the actual situation of patients, including social skills training, daily living skills training, etc., help patients better integrate into society, improve self-care ability, and enhance quality of life according to the actual situation of patients [3].

3.2.2 Influence of clinical nursing pathway combined with individualized nursing intervention on patients' quality of life

As shown in Table 2, the scores on quality of life of patients in the experimental group is significantly higher than those in the control group ($p < 0.001$), which indicates that clinical nursing pathway combined with individualized nursing intervention has a significant impact on the quality of life of patients with active pulmonary tuberculosis. Individualized nursing intervention provides targeted nursing measures for patients' individual differences and needs, which can meet patients' individual needs and improve the quality of life. Through emotional support, educational guidance and other means, individualized care helps patients cope with the psychological stress of tuberculosis treatment, enhance the sense of control over the disease and self-confidence, and thus improve the quality of life of patients. The application of clinical nursing pathway can normalize and standardize the nursing process to ensure that patients receive uniform, high quality nursing service. Key time nodes and care goals set in the path help improve the efficiency and quality of care. Therefore, the application of clinical care pathways also provides patients with more stable and coherent nursing experience, which helps to improve patients' quality of life. The improvement of quality of life assessment index may be affected by various factors in the experimental group. Individualized nursing interventions may have improved patients' physical function, mental state and social ability, all of which are closely related to quality of life. In addition, patients in the experimental group received more comprehensive and personalized care that may have enhanced their ability to cope with the disease and improved their quality of life.

3.2.3 Analysis and discussion of relevant influencing factors

In this study, clinical nursing pathway combined with individualized nursing intervention showed significant clinical effect and improved the quality of life in patients with active pulmonary tuberculosis. However, there are several related influencing factors that may influence the effectiveness of this intervention.

Age factor. Aging is usually accompanied by the decline in physical function and quality of life. In this study, younger patients may be more likely to accept and adapt to individualized care intervention, resulting in better clinical effect and improved quality of life. In addition, elderly patients may face more comorbidities and living burden, which may have some impact on their treatment effect and quality of life.

Disease severity factor. More severe patients often require more aggressive and individualized nursing interventions. The application of clinical care pathway ensures that patients receive standardized treatment, with intervention and adjustment at appropriate times. Therefore, for patients with more severe disease, clinical care pathway combined with individualized care intervention may be more critical to help them better cope with the disease and improve treatment effect and quality of life.

Treatment compliance factors. Patients' compliance to the treatment program directly affects the treatment effect and quality of life. Individualized nursing intervention can enhance patients' understanding and awareness of treatment and improve treatment compliance by providing targeted education and support. The application of clinical nursing pathway can help standardize the treatment process and improve the continuity and consistency of treatment. Therefore, for those patients who can follow the treatment regimen well, clinical care pathway combined with individualized care intervention may achieve better results.

Other possible factors include patients' education, social support network and financial status. These factors may affect patients' acceptance of treatment, resource utilization, and quality of life. Further studies can analyze influence of these potential influencing factors on the effect of clinical nursing pathway combined with individualized nursing intervention by controlling them.

Clinical nursing pathway combined with individualized nursing intervention has shown significant application effect in patients with active pulmonary tuberculosis. Factors such as age, severity of disease and treatment compliance may influence the effect of intervention to some extent. Further research can provide more precise and individualized nursing strategies for clinical practice by exploring the mechanism of action of these influencing factors.

4. Conclusion

The purpose of this study is to investigate the application effect of clinical nursing pathway combined with individualized nursing intervention in patients with active pulmonary tuberculosis. The results show that clinical nursing pathway combined with individualized nursing intervention has significant clinical effect and improved quality of life in patients with active pulmonary tuberculosis. The improvement of patients showed in the experimental group is significantly better than that in the control group in clinical symptom relief, physical recovery, mental state, social function and daily living ability. Individualized nursing intervention provides targeted nursing measures for patients' individual differences and needs, which can help improve patients' symptoms and promote recovery. The application of clinical nursing pathway can normalize and standardize nursing process and improve nursing efficiency and quality. Through clinical care pathways combined with individualized care intervention, patients can better cope with the TB treatment process, improve treatment compliance and efficacy, and thus improve quality of life. However, there are still some limitations in this study, such as relatively small sample size and short study time. The effect of other potential influencing factors on the intervention effect was not considered. Therefore, in the future studies, the sample size can be increased, the study time can be extended, and more potential influencing factors can be considered to evaluate the effect of clinical care pathway combined with individualized nursing intervention in patients with active tuberculosis more comprehensively.

References

[1] An Fengli. Logistic regression analysis of factors influencing delay in diagnosis and treatment of patients with active pulmonary tuberculosis and intervention strategies [J]. *Clinical Research*, 2022,

30(07):19-22.

[2] Peng Caihong, Li Guomei, Zhong Xiuqiong, Liang Yanfang, Liu Bing. *Effect of nursing intervention on treatment adherence in patients with primary active pulmonary tuberculosis [J]. China Pharmaceutical Science, 2015, 5(21): 128-130.*

[3] Sun Suyan. *Observation on the effect of nursing intervention on the results of sputum smear examination of active pulmonary tuberculosis [J]. Chinese and foreign medical science, 2013, 32(36):146+148. DOI:10.16662/j.cnki.1674-0742.2013.36.030.*