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Effect of Continuous Nursing Based on WeChat Platform on Medical Coping Style and Quality of Life in Patients with Diabetic Foot

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Abstract: ***Objective:*** *To explore the effect of continuous nursing intervention model based on WeChat platform on medical coping style and quality of life in patients with diabetic foot, and to provide reference for optimizing clinical nursing pathway.* ***Methods:*** *A total of 118 patients with diabetic foot who were hospitalized in the Department of Endocrinology of the Affiliated Hospital of Youjiang Medical university for Nationalities from May 2022 to May 2025 were selected as the study subjects. They were divided into control group and observation group by random number table method, 59 cases in each group. The control group received routine discharge nursing and follow-up visit, and the observation group received continuous nursing intervention based on WeChat platform for 6 months. The intervention included establishing a WeChat nurse-patient group, regularly pushing home care knowledge of diabetic foot, online answering, personalized psychological counseling, and supervising blood glucose and medication management. The medical coping style questionnaire and diabetes specific quality of life scale were used to evaluate and compare the coping style and quality of life of the two groups before and after intervention.* ***Results:*** *After intervention, the score of confrontation dimension in the medical coping style scale of the observation group was significantly higher than that of the control group, and the score of avoidance and yield dimension was significantly lower than that of the control group, the differences were statistically significant ($P < 0.05$). The scores of each dimension of diabetes-specific quality of life scale in the observation group were significantly lower than those in the control group, and the differences were statistically significant ($P < 0.05$).* ***Conclusion:*** *Continuous nursing based on WeChat platform can effectively improve the medical coping style of patients with diabetic foot, promote them to adopt positive coping strategies, reduce negative avoidance and yield psychology, so as to significantly improve the quality of life of patients, which is worthy of popularization and application in clinical nursing work.*

Keywords: WeChat platform, Continuing care, Diabetic foot, Medical coping style, Quality of life.

1. Introduction

Diabetic foot is one of the most serious and expensive chronic complications in diabetic patients, and it is also the main cause of amputation and disability in diabetic patients [1]. With the aggravation of population aging and the change of diet structure in China, the incidence of diabetic foot is increasing year by year, which seriously threatens the life safety of patients and significantly reduces their quality of life [2-3]. Because diabetic foot has the characteristics of long course of disease, repeated attacks and difficult healing, patients often need to face limb pain, heavy economic burden and fear of amputation for a long time after discharge, and are prone to negative emotions such as anxiety and depression, which leads to their tendency to adopt negative coping styles of avoidance or surrender, thus further reducing treatment compliance and affecting the rehabilitation process [4]. Therefore, how to help patients establish a positive medical coping style and improve their quality of life is an important issue to be solved urgently in clinical nursing work. The traditional nursing model is mostly limited to the period of hospitalization. After discharge, patients often find it difficult to maintain good self-management behavior due to the lack of professional health guidance, resulting in the interruption of the continuity of nursing services [5]. In recent years, with the rapid development of mobile Internet technology, WeChat has become one of the main tools for people to obtain information and communicate. The continuous nursing based on WeChat platform breaks the limitation of time and space, and can provide real-time health guidance, psychological support and condition monitoring for patients through various forms such as text, pictures and video, which effectively extends the radius of nursing service [6-7]. The purpose of this study was to explore the effect of continuous nursing based on WeChat platform on medical coping style and quality of life of patients with diabetic foot, in order to provide scientific basis for optimizing clinical nursing intervention strategies.

2. Data and Methods

2.1 General Information

A total of 118 patients with diabetic foot who were hospitalized in the Department of Endocrinology, Affiliated Hospital of Youjiang Medical university for Nationalities from May 2022 to May 2025 were selected as the study subjects. They were divided into control group and observation group by random number table method, 59 cases in each group. The control group received routine discharge nursing and follow-up visit, and the observation group received continuous nursing intervention based on WeChat platform for 6 months. Inclusion criteria: In line with the diagnostic criteria for diabetes in the Chinese diabetes prevention and treatment guidelines, and in line with the diagnostic criteria of Wagner grade 1-3; consciousness is clear, with normal language communication and understanding ability, can skillfully use WeChat; aged 18 years old and above, and volunteered to participate in this study, and signed informed consent. Exclusion criteria: patients with severe heart, liver, kidney and other important organ failure, or accompanied by severe malignant tumor; there are serious cognitive dysfunction, history of mental illness or history of taking psychotropic drugs, unable to

cooperate with the questionnaire; during the study period, the patient 's condition deteriorated and needed to be transferred to the department, transferred to the hospital for treatment or dropped out halfway, and lost to follow-up. In the control group, there were 42 males and 17 females; the age was 39-72 years old, with an average of (59.78 ± 4.26) years old. In the observation group, there were 40 males and 19 females; the average age was (60.12 ± 2.44) years old. There was no significant difference in general data between the two groups ($P > 0.05$).

2.2 Intervention Methods

2.2.1 Control group

The control group was given routine nursing and discharge health education in the department of endocrinology. During the period of hospitalization, the basic knowledge of diabetic foot was taught to the patients and their families by the responsible nurses, including the diet control principle of diabetes, the precautions of exercise, the daily examination method of foot, the common sense of foot care, the correct use of insulin injection or hypoglycemic drugs and the prevention and treatment of hypoglycemia. When the patient was discharged from the hospital, the attending physician issued the discharge doctor 's advice, and the responsible nurse carried out detailed discharge guidance, informing the patient of the review time, the frequency of wound dressing change and the outpatient follow-up process. After discharge, the control group received routine telephone follow-up, and the follow-up frequency was once a month. The patient 's blood glucose control, wound healing progress and medication compliance were mainly asked, and the patient 's questions were answered. Continuous intervention for 6 months.

2.2.2 Observation group

On the basis of routine nursing in the control group, the observation group implemented continuous nursing intervention based on WeChat platform. The intervention period is 6 months, and the specific implementation measures are as follows:

(1) The establishment of WeChat continuous nursing group

The team was composed of a head nurse as the team leader, an attending physician, and four responsible nurses with the title of chief nurse or above. Before the intervention, the team members were trained in a unified way, including the latest diagnosis and treatment guidelines for diabetic foot, the relevant theories of medical coping styles, WeChat platform communication skills, psychological counseling methods, etc., to ensure the homogenization and standardization of interventions.

(2) Establish a WeChat nurse-patient communication group

After the patients were admitted to the hospital, the patients in the observation group and the main care family members were invited to join the WeChat group of the diabetic foot recreation home. The group implements real-name management, formulates strict group rules, prohibits the release of advertisements, irrelevant links and negative emotions, and ensures the scientific nature of the information in the group and the enthusiasm of the environment.

(3) Implement phased and multi-dimensional WeChat intervention content

1) Information push: The primary nurse pushed the diabetic foot home care knowledge screened by evidence-based nursing to the patients through the WeChat public number or WeChat group at 3 p.m.on Monday, Wednesday and Friday. The content covers: disease management: the frequency and method of blood glucose monitoring, the standardized use of oral drugs and insulin, the self-examination method of foot artery pulsation, etc. Foot care: according to the Wagner classification of diabetic foot, guide patients and their families to scientifically wash feet (water temperature < 37°C), trim toenails, select appropriate shoes and socks, and foot massage skills. Psychological intervention: regularly share typical cases of successful diabetic foot treatment to enhance patient confidence; push emotional regulation techniques, such as deep breathing relaxation, mindfulness decompression, etc., to guide patients to actively face the disease. Life chapter: foot warmth and protection during seasonal alternation, the importance of quitting smoking and limiting alcohol, and personalized exercise prescription.

2) Online Answer: The nursing group arranged a nurse to be on duty for 1 hour every day to answer the questions raised by the patients. For the patient 's wound redness, exudate and other pictures uploaded for consultation, the nurse on duty needs to make a preliminary assessment and give advice, and remind the patient to seek medical treatment in time if necessary. For emergency questions from patients on non-duty time, team members should respond within 24 hours to ensure the timeliness of communication. At the same time, patients with good rehabilitation effect in the group are encouraged to share experience and build a peer support system.

3) Individualized psychological counseling and coping style guidance: the responsible nurse conducted a private one-to-one WeChat voice or video communication with the patient every 2 weeks for about 15-20 minutes. The psychological state and medical coping style of the patients were evaluated during the communication. For patients who adopt avoidance coping: nurses establish a trust relationship through empathy, listening, etc., and clarify that avoidance problems will only lead to deterioration of the disease, encourage patients to face up to the disease, and actively participate in treatment decisions. For patients who adopt yield response: focus on strengthening social support, emphasizing the progress of modern medical technology, guiding patients to recall the past experience of overcoming difficulties, stimulating their internal resilience, and assisting them to change from helpless acceptance to active cooperation. For patients facing coping: give full affirmation and praise, and use positive reinforcement mechanism to consolidate their positive behavior.

4) Supervision and feedback mechanism: urge patients to upload blood glucose records and foot photos in the form of punch cards every Sunday evening in the group. Responsible nurses regularly carry out statistical analysis on the patient 's

punch card situation, and send targeted reminders and rectification suggestions through WeChat in time for patients with poor blood glucose control or improper foot care. The electronic version of the questionnaire was distributed through WeChat group every quarter to understand the changes in patients ' satisfaction and demand for nursing services, and the intervention plan was dynamically adjusted accordingly.

2.3 Observation Indicators

(1) General information questionnaire. The self-designed scale included demographic data (age, gender, marital status, education level, current occupation, place of residence, payment method of medical expenses, family per capita monthly income and economic burden of disease) and disease characteristics (duration of illness, duration of illness, presence or absence of other chronic diseases, classification of diabetic foot, smoking, drinking, exercise), blood glucose, etc.

(2) Medical coping style. The medical coping style questionnaire was used to evaluate the patients ' negative or positive coping styles to face the disease. The scale consists of 3 dimensions and 20 items. The positive coping style includes facing (8 items), and the negative coping style includes avoidance (7 items) and yielding (5 items). Among them, 8 items need to be scored reversely. The higher the score, the more sensitive the patient is to the disease, and the more likely it is to adopt the coping style to deal with the disease. Cronbach 's coefficient was 0.875 [8].

(3) Quality of life. The quality of life of diabetic patients was evaluated by the diabetes quality of life specific scale. The scale includes 27 questions and 4 dimensions, which measure the adverse effects of diabetes on patients ' physiological function, psychological function, social relationship and treatment dimension respectively [9]. Each question was scored by 1 to 5 points, all of which were reverse scores. The higher the score, the greater the adverse effects of diabetes, the worse the quality of life. The Cronbach 's coefficient of the scale was 0.95 [10].

2.4 Statistical Methods

Statistical analysis was performed using SPSS25.0 software. The measurement data were expressed as mean ± standard deviation, and the comparison was performed by two independent samples t test. The count data were expressed by the number of cases and percentage, and the comparison between groups was performed by 2 test. $P < 0.05$ was considered statistically significant.

3. Results

3.1 Comparison of Medical Coping Style Scores Between the Two Groups of Patients

The results showed that after the intervention, the score of confrontation dimension in the medical coping style scale of the observation group was significantly higher than that of the control group, and the score of avoidance and yield dimension was significantly lower than that of the control group, the differences were statistically significant ($P < 0.05$), as shown in Table 1.

Table 1: Comparison of medical coping style scores between the two groups (n = 118)

Groups	Avoidance		confront		Yielding	
	Before intervention	After intervention	Before intervention	After intervention	Before intervention	After intervention
Control group	13.82±3.16	10.77±1.37	18.47±2.25	21.35±3.71	9.43±1.61	7.53±1.78
Observation group	13.8±3.13	8.16±1.47	18.51±2.25	25.53±3.65	9.43±1.24	4.83±1.72
t	1.046	2.199	0.869	2.087	0.749	2.175
P	0.102	0.031	0.212	0.045	0.223	0.034

3.2 Comparison of Quality of Life Scores Between the Two Groups of Patients

The results showed that the scores of each dimension of the diabetes-specific quality of life scale in the observation group were significantly lower than those in the control group, and the difference was statistically significant ($P < 0.05$), as shown in Table 2.

Table 2: Comparison of quality of life scores between the two groups (n= 118)

Groups	Physiological function		Psychological spirit	
	Before intervention	After intervention	Before intervention	After intervention
Control group	47.92±7.49	31.37±6.47	27.94±6.37	21.37±5.54
Observation group	47.69±7.27	24.45±6.23	28.36±6.42	15.25±5.21
t	0.484	6.463	0.402	6.741
P	0.632	<0.001	0.688	<0.001

4. Discussion

4.1 Continuous Nursing Based on WeChat Platform can Effectively Improve the Medical Coping Style of Patients with Diabetic Foot

Medical coping style refers to the cognitive and behavioral strategies adopted by individuals in the face of various stressors in the process of disease diagnosis, treatment and rehabilitation, mainly including three dimensions: facing, avoiding and yielding [11]. Positive coping style can help patients actively seek disease-related information, cooperate with treatment, and improve prognosis. Negative coping styles may lead to poor treatment compliance, poor blood glucose control, and accelerated complications. Diabetic foot is a chronic complication with long course of disease, painful treatment and high disability rate. Patients with diabetic foot suffer from great physical pain and economic pressure for a long time, and are prone to anxiety, fear and even despair, which leads to their tendency to adopt negative coping strategies of avoidance and surrender in the face of disease [12]. The results of this study showed that the scores of the face dimension in the MCMQ scores of the two groups of patients before the intervention were lower, while the scores of the avoidance and yield dimensions were relatively high, which was consistent with the research results of Wei Yanni et al. [13], indicating that diabetic foot patients generally have

poor coping styles. The results of this study showed that after 6 months of intervention, the face dimension score in the MCMQ scale of the observation group was significantly higher than that of the control group, while the avoidance and yield dimension scores were significantly lower than those of the control group ($P < 0.05$). This shows that continuous nursing based on WeChat platform can effectively guide patients to establish a positive medical coping style. The reasons for the analysis are as follows: (1) The information push function based on the WeChat platform breaks the limitations of traditional health education in time and space. By regularly sending scientific and easy-to-understand disease knowledge and rehabilitation cases, it helps patients to correctly recognize the outcome and prognosis of diabetic foot. Eliminate the sense of fear and uncertainty caused by lack of knowledge, thereby enhancing their confidence in defeating the disease and prompting them to be more willing to face the disease. (2) Through peer support education and successful case sharing in WeChat group, patients can see how patients with the same condition can achieve rehabilitation through active efforts. This alternative experience can effectively stimulate patients' self-efficacy, reduce the learned helplessness caused by long-term treatment, and thus reduce the yield psychology. (3) Through the personalized psychological counseling provided by WeChat, the nursing group timely intervenes in the negative emotions of patients, helps them to vent their emotional pressure, guides them to re-evaluate the threat of disease, and shifts from negative escape to active cooperation with treatment.

4.2 Continuous Nursing Based on WeChat Platform can Significantly Improve the Quality of Life of Patients with Diabetic Foot

Quality of life is one of the important indicators to evaluate the therapeutic effect of chronic diseases. The disease course of diabetic foot is long, and most patients do not have the professional ability of self-care, which leads to the failure of effective control of the disease, and even causes a series of serious consequences such as amputation, which seriously affects the quality of life of patients [14]. In addition, long-term disease torture and economic burden often lead to psychological problems such as depression and anxiety, which further reduces the quality of life of patients. Therefore, how to improve the quality of life of patients through effective nursing intervention is the core goal of clinical nursing work. The results of this study showed that after the intervention, the scores of each dimension of the DSQL scale in the observation group were significantly lower than those in the control group ($P < 0.05$), suggesting that continuous nursing based on WeChat platform can improve the quality of life of patients in an all-round way. The reasons may be as follows: (1) The model strengthens the patient's self-management ability. Through WeChat group's daily blood glucose punch card and foot care supervision, patients can obtain timely feedback and guidance from professionals, correct bad living habits, effectively control blood glucose levels, promote the healing of foot ulcers, and prevent the occurrence of high-risk diabetic foot. The relief of physiological symptoms directly reduces the patient's physical pain, thereby improving the physiological function dimension score [15]. (2) The enhancement of psychosocial support improved the mental health of patients. The WeChat group creates a warm and supportive social environment. Patients can not only pour out their troubles within the group, obtain psychological counseling from medical staff, but also establish emotional connections with their patients. This interaction effectively alleviates the patient's sense of loneliness and abandonment, reduces depression and anxiety, and improves the psychological / spiritual dimension score [16]. (3) The improvement of treatment compliance reduces the interference of disease on life. Through WeChat reminding medication and follow-up visits, as well as online answering medication questions, patients can implement treatment plans more regularly, reduce the number of emergency medical visits caused by repeated illness, and reduce the negative impact of treatment and family burden.

In summary, continuous nursing based on WeChat platform can effectively improve the medical coping style of diabetic foot patients, guide them to adopt positive coping strategies, reduce avoidance and surrender psychology, and significantly improve the quality of life of patients. The model is scientific, convenient and efficient, and is worthy of further promotion and application in clinical nursing work. Although this study has achieved positive results, there are still some limitations. First of all, the sample size of this study is relatively small and limited to a single center, and the extrapolation of the research results is limited. Secondly, the intervention period is 6 months. For the lifelong concomitant disease of diabetic foot, the long-term intervention effect still needs further follow-up observation.

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