

# Effect of community management on diabetes prevention and treatment

**Baojia Li**

*Pinghu Community Health Service Center of Shenzhen Overseas Chinese Hospital, Shenzhen, China*

**Abstract:** *Objective: To explore the effect of community management on diabetes prevention and treatment. Methods: The clinical data of 86 diabetic patients were analyzed retrospectively. Patients were randomly divided into control group and intervention group according to random number table method, with 43 cases in each group. They were given comprehensive treatment such as diabetes education, diet control, exercise therapy, drug therapy and blood glucose monitoring. At the same time, the general situation and SF-36 scale were investigated to analyze the influencing factors. Results: The patients' quality of life improved significantly before and after the intervention, and the scores of general health, physiological function, mental health and vitality were significantly different before and after the intervention. Before and after the intervention, the compliance rate of blood glucose control in the intervention group changed obviously. After 1.5 years of follow-up management and comprehensive intervention, the blood glucose control rate in the intervention group was improved obviously. Conclusion: Extensive use of community management and community therapy can stabilize patients' condition, promote patients' rehabilitation, and make patients more cooperative with treatment.*

**Keywords:** *Community management; Diabetes prevention; treat*

## 1. Introduction

The effective control of diabetes patients depends on the patients' awareness of the disease and effective prevention and treatment measures [1-2]. Many diabetic patients have poor self-control ability and lack the knowledge and data of diabetes prevention and control. How to find an effective prevention and control means has become the key to clinical prevention and control [3]. At present, there are many complications in community management of diabetic patients, and the treatment and control effect of diabetes is not good. Because diabetes is a lifelong disease, once it occurs, it must adhere to lifelong comprehensive treatment. The quality of disease control is closely related to patients' compliance with comprehensive treatment intervention, which directly affects patients' health and quality of life.

Community management is an effective means to prevent and control diabetes. It also provides health education, blood pressure monitoring, medication and life guidance to deepen patients' understanding of diseases, improve eating behavior, stabilize blood sugar and prevent complications. In this study, diabetes patients were treated with community management, and the effect was good.

## 2. Materials and methods

### 2.1. General information

This group selected the clinical data of 86 diabetic patients admitted to the author's hospital from February 2019 to March 2020 for retrospective analysis. Among all patients, 58 were males and 28 were females; they were 45 to 70 years old, with an average of  $(45.84 \pm 1.34)$  years old; The course of diabetes is 4-15 years, with an average of  $(7.5 \pm 3.3)$  years. According to the random number table method, the patients were randomly divided into two groups: control group and intervention group, with 43 cases in each group. There was no statistically significant difference between the two groups of general information ( $P > 0.05$ ), and they were comparable.

### 2.2. Method

The control group received routine management based on traditional treatment, including routine

health education and medication guidance.

The intervention group was given community management intervention:

(1) According to the baseline data such as gender, age and condition of patients, establish personal health management files, register the medication history, disease history and living habits of patients, record and compare their physical conditions in different periods, and thus formulate a sound health management plan;

(2) Take health talks, multimedia, PPT and health manuals in the community to explain diabetes-related knowledge, improve patients' awareness of diabetes, and fully understand the significance of controlling blood sugar;

(3) Pay attention to exercise, telling patients to keep exercising for no less than 30 minutes every day, walking, jogging, swimming and not feeling tired. Take fruit candy with you when you go out in case of hypoglycemia.

(4) Standardized drug treatment. The diabetes specialist shall formulate and implement the drug treatment plan according to the patient's condition, make timely adjustment according to the condition change, and give guidance and adjustment during monthly follow-up.

(5) Establish special disease files to carry out follow-up management. Community doctors follow-up diabetes patients with intervention management once a month. Follow-up methods include outpatient follow-up and household follow-up, carry out inquiry and health examination, monitor blood sugar and blood pressure free of charge, understand the disease progress and comprehensive treatment, and fill in follow-up records. In view of the existing problems, this paper puts forward suggestions for improvement, puts forward the next intervention goal and strengthens comprehensive intervention measures.

(6) Through SF-36 scale combined with self-designed questionnaire on the basic situation of diabetic patients, the subjects were investigated by inquiry questionnaire. Self-designed questionnaire was used to investigate diabetic patients. In this study, SF-36 scale was used to measure the quality of life of diabetic patients managed by community [4]. SF-36 scale includes eight dimensions: physiological function, physiological role, social function, physical pain, mental health, emotional role, vitality and overall health;

### **2.3. Quality control**

Strictly train local community health service personnel as investigators, unify the survey terms and inquiry methods, and fill out a questionnaire in the form of face-to-face interviews after receiving the training. Using Visual-Foxpro6.0 software, the database is established, and logical proofreading is set up at the same time. The entry work is entered into the computer by double entry. Strict quality control is carried out in the whole process.

### **2.4. Observation index**

After community management and community treatment, two groups of patients were returned for one year, and blood glucose levels were tested three times in the 6th, 9th and 12th months after treatment. Compare the changes of blood glucose between the two groups one year later.

### **2.5. Statistical treatment**

After all the data are verified, professionals use Epi Data 3.0 software to establish a database, input data and carry out logical error detection, and use SPSS 11.5 for statistical analysis. The measurement data is compared by T test, and the counting data is compared by  $\chi^2$  test, with  $P < 0.05$  as the statistical significance.

## **3. Result**

### **3.1. Analysis of influencing factors in 8 dimensions of SF-36 scale and comparison of quality of life before and after intervention**

The factors affecting patients' quality of life were comprehensively evaluated by SF-36 scale. The

scores of influencing patients' quality of life mainly showed four dimensions: general health, physiological function, mental health and vitality. After comprehensive intervention such as community diabetes management for one year, the quality of life of patients was investigated again, and it was found that the quality of life of patients before and after the intervention improved significantly, and the scores of overall health, physiological function, mental health and vitality were statistically different before and after the intervention. See table 1.

*Table 1 Scores of 8 dimensions of SF-36 scale and comparison before and after comprehensive intervention ( $\bar{x} \pm s$ , points)*

Dimension	Before intervention	After intervention	T value	P value
Physiological function	51.2±6.3	77.6±10.4	-36.21	0.000
Social function	66.9±11.5	71.5±12.3	-1.82	0.058
Physiological role	74.5±10.6	78.2±10.5	-1.68	0.014
Vitality of life	50.8±5.2	55.8±7.4	-12.41	0.000
Somatic pain	63.9±10.5	66.5±11.3	-1.14	0.063
Emotional role	67.9±11.2	72.8±10.5	-1.88	0.000
Mental health	55.2±5.1	68.3±11.7	-24.36	0.000
General health	16.5±5.3	63.9±11.2	-22.82	0.000
Aggregate score	479.2±33.1	566.9±60.7	-21.75	0.000

### 3.2. Blood glucose control before and after intervention

After 1.5 years' follow-up management and comprehensive intervention, the blood glucose control rate in the intervention group increased significantly ( $\chi^2=131.247$ ,  $P=0.000$ ), the ideal control rate increased by 44.58%, the good control rate increased by 4.79%, and the bad control rate decreased by 48.67%. However, the blood glucose control rate in the control group also increased slightly ( $\chi^2=4.236$ ,  $P=0.025$ ), but the improvement was obviously lower than that in the intervention group. The ideal rate of blood glucose control in the intervention group was 31.78% higher than that in the control group, and the rate of poor blood glucose control was 48.22% lower than that in the control group. There was a significant difference in blood glucose control effect between the intervention group and the control group ( $\chi^2=60.129$ ,  $P=0.000$ ).

*Table 2 Blood glucose control of diabetic patients before and after intervention management*

Group	Time	Ideal		Good		Bad	
		Number of people	Control rate (%)	Number of people	Control rate (%)	Number of people	Control rate (%)
Intervention group	Base	11	25.6	19	44.2	26	60.5
	1.5 years later	24	55.8	21	48.8	23	53.5
Control group	Base	4	9.3	19	44.2	25	58.1
	1.5 years later	18	41.9	8	18.6	22	51.2

## 4. Discussion

Diabetes mellitus, as a chronic disease, is difficult to be found, which has become one of the most harmful diseases to people's health. Due to the low self-control ability of diabetic patients, many people cannot take or control drugs according to the doctor's advice due to various factors, which eventually leads to aggravation of the disease [5-6]. Therefore, it is necessary and urgent to change the current situation of treating diabetes with drugs. The model based on community health and health dynamic management can communicate with community doctors and higher-level doctors effectively and barrier-free, and truly implement the overall blood sugar management of diabetic patients.

Related studies have shown that diabetes is a lifelong disease, and it is difficult to achieve the ideal control effect by traditional medicine treatment in hospitals, while continuous diabetes management and personalized comprehensive intervention in community health service institutions can effectively control diabetes and reduce the risk of complications [7]. In this intervention study, aiming at the individual condition changes and risk behavior characteristics of diabetic patients, lifestyle intervention

and standardized drug treatment were adopted. Individualized continuous health education and comprehensive intervention of diet, exercise and psychological factors were carried out for community diabetic patients to guide patients to rationally regulate drug use. In this intervention study, aiming at the individual condition changes and risk behavior characteristics of diabetic patients, lifestyle intervention and standardized drug treatment were adopted. Individualized continuous health education and comprehensive intervention of diet, exercise and psychological factors were carried out for community diabetic patients to guide patients to rationally regulate drug use.

SF-36 is recognized as a universal quality of life assessment scale in the world. Domestic and foreign research literature shows that the quality of life of diabetic patients generally declines [8]. One year after the comprehensive intervention of community diabetes management, the results showed that the scores of overall health, physiological function, mental health and vitality were significantly improved, and the difference was statistically significant, indicating that the comprehensive intervention of community diabetes management can improve the quality of life of diabetic patients in four dimensions: overall health, physiological function, mental health and vitality. After the intervention, the estimation of one's health is optimistic, the feeling of energy is improved, and the feeling of fatigue is decreased, which is also related to the improvement of awareness rate of prevention and treatment knowledge, psychological relaxation, increased exercise and good blood sugar control.

The implementation of diabetes community management has enhanced patients' understanding of diabetes, eased psychological pressure, and established confidence in correctly treating diseases and overcoming diseases. Especially in community work, patients' cognition of diabetes varies greatly with different levels. It is necessary to pay attention to the influence of negative emotions on diseases and maintain a good attitude, so as to truly prevent and control diabetes.

## 5. Conclusions

The implementation of community management of diabetes can find early diabetic patients with impaired fasting blood glucose and impaired glucose tolerance, and carry out community management, health education, diabetes diet and exercise, which will benefit them and prevent diabetes in advance.

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