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Discussion on the Practice of Chronic Disease Medication and Exercise Guidance in Community Pharmaceutical Services

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Abstract: *Objective:* To explore the practical effect of applying chronic disease medication and exercise guidance in community pharmaceutical services. *Methods:* 82 patients with chronic diseases were selected for data analysis from July 2024 to June 2025 at the Central Health Center of Dongshuanggou Town, Hongze District, Huai'an City, Jiangsu Province. They were divided into groups using the random number table method, with 41 patients in each group. The experimental group received conventional community pharmaceutical services plus chronic disease medication and exercise guidance, and the control group received conventional community pharmaceutical services. The data differences between the groups were compared. *Results:* Compared with the control group, the test group had significantly lower blood pressure and blood sugar after intervention, significantly higher medication compliance, significantly higher post-intervention quality of life scores, and significantly lower incidence of adverse reactions $P < 0.05$. Comparing the blood pressure, blood sugar, and quality of life scores between the two groups before intervention, $P > 0.05$. *Conclusion:* The practical effect of applying chronic disease medication and exercise guidance in community pharmaceutical services is ideal.

Keywords: Community pharmaceutical services; Chronic disease medication; Exercise guidance; Practical effects

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1. Introduction

The main characteristics of chronic diseases are long course, complex causes, and high incidence. Among them, hypertension, diabetes, etc. are common, which will affect the health of residents and increase the medical burden [1]. There are a large number of adult patients with hypertension and diabetes in our country. Most patients take medication for a long time. Problems such as low medication compliance and irregular lifestyles are common, and the effectiveness of disease control is seriously affected. The core components of primary medical and health services include community pharmacy services, which can connect medical

institutions and patients with chronic diseases, and are currently transforming into diversified health services. Conventional community pharmacy services include drug distribution and basic medication consultation [2], which makes it difficult to effectively meet the refined management needs of patients. The National Health Commission has clearly stated that it is very necessary to strengthen the intervention of non-drug measures such as exercise for patients with chronic diseases, which can improve the effect of chronic disease control. This study selected 82 patients to explore the practical effect of applying chronic disease medication and exercise guidance in community pharmaceutical services.

2. Materials and methods

2.1. General information

Selected from the Central Health Center of Dongshuanggou Town, Hongze District, Huai'an City, Jiangsu Province, from July 2024 to June 2025, 82 patients with chronic diseases were selected for data analysis. The inclusion criteria were: (1) consistent with the diagnostic standards for chronic diseases such as hypertension and type 2 diabetes; (2) long-term oral medication; (3) clear consciousness and active cooperation with follow-up; (4) informed consent. Exclusion criteria: (1) Combined with severe liver and kidney dysfunction; (2) Malignant tumors; (3) Mental illness; (4) Unable to participate in sports due to impairment of limb movement; (5) Recently participated in similar intervention studies. 82 patients with chronic diseases were randomly grouped into two groups, with 41 patients in each group. Comparing the data of the two groups, $P > 0.05$ was obtained. The general information of the patients is shown in **Table 1**.

Table 1. Comparison of the general information of the two groups

Group	Male/Female (%)	Age (years old)	Hypertension/Type 2 Diabetes/Others	Duration of disease (years)
Experimental group (n = 41)	21/20	62.94 ± 5.41	25/15/1	8.25 ± 2.14
Control group (n = 41)	22/19	63.01 ± 5.15	24/14/3	8.28 ± 2.32
χ^2/t	0.0489	0.0600	3.0723	0.0609
P	> 0.05	> 0.05	> 0.05	> 0.05

2.2. Method

The control group applied conventional community pharmacy services: providing patients with drug distribution, basic medication consultation, follow-up visits every 3 months to understand patients' medication status and changes in condition, and issuing health promotion brochures to patients.

The experimental group applied conventional community pharmacy services + chronic disease medication and exercise guidance, and added:

(1) Chronic disease medication guidance: combined with the patient's chronic disease type, medication regimen, age and education level, personalized medication guidance was developed and implemented, and the patient implemented it after understanding. (a) Medication standard guidance: Explain drug knowledge to patients one by one, including the core functions, specific usage, taking time and dosage adjustment principles. It is emphasized that the dosage of the drug cannot be changed, and the drug should not be discontinued or changed without authorization. The method of handling missed doses should be emphasized. (b) Medication safety guidance: Explain adverse drug reactions to

patients, emphasize identification methods and emergency response strategies, check patients' drug contraindications, ask patients about their past drug allergies, and inform patients not to take interacting drugs at the same time, and to avoid tobacco and alcohol from affecting the effects of drugs. (c) Compliance intervention: Construct medication files for patients, record medication types, dosages, medication status, follow-up results and other information in detail, complete a weekly telephone follow-up, conduct offline medication supervision once a month, conduct face-to-face medication inspections for patients, and answer questions. If the patient's compliance is poor, use collaborative supervision by family members to ensure that the patient takes medication on time, use case explanations to increase the patient's attention to medication, and improve the patient's medication compliance. (d) Regular medication evaluation: Evaluate the patient's medication effect every three months, and combine it with the patient's blood pressure and blood sugar monitoring results and changes in the condition to adjust the medication plan to ensure it is reasonable and targeted.

(2) Exercise guidance: Determine the patient's personalized exercise plan based on the patient's age, type of chronic disease, severity of illness, and physical activity ability. (a) Selection of exercise types: Patients with hypertension can engage in low-intensity aerobic exercise such as brisk walking, jogging, Tai Chi, and cycling, but should not exercise strenuously. Patients with diabetes can choose moderate-intensity aerobic exercise such as brisk walking, swimming, square dancing, and dumbbell exercises. They can also engage in aerobic exercise and mild resistance exercise to effectively control the patient's blood sugar. If the patient has difficulty moving his limbs or is very old, he should exercise moderately, such as slow walking, Tai Chi, sitting and stretching, etc., to avoid accidents such as falls. (b) Exercise intensity and time control: When determining the initial exercise speed, adhere to the principle of no discomfort and conscious slight fatigue, and control the exercise heart rate to (170-age) times/min to avoid excessive heart rate. Initially, 15-20 minutes each time, 3 times/week, gradually increased to 30-40 minutes, 5 times/week. (c) Guidance on exercise precautions: Warm-up exercises should be carried out for 5-10 minutes before exercise, and relaxation exercises should be carried out for 5-10 minutes after exercise. When exercising, carry emergency medicine with you. Patients with high blood pressure should carry antihypertensive medicine, and patients with diabetes should carry blood glucose meters, candy, etc. Do not exercise on an empty stomach. Choose a safe, flat, and ventilated venue for exercise. If you experience dizziness, chest tightness, palpitations, difficulty breathing, etc. during exercise, you need to stop immediately. If it does not relieve after resting, you should go to the hospital for diagnosis and treatment in time. (d) Exercise supervision and follow-up: During weekly follow-up visits, patients will be asked in detail about their exercise performance, and their exercise duration, intensity, and discomfort reactions will be recorded. Offline exercise guidance will be provided to patients once a month, irregular movements will be corrected on-site, and exercise plans will be adjusted based on the patient's exercise adaptation and changes in disease conditions. Encourage patients to form mutual aid groups to supervise each other's exercise and encourage each other to improve exercise compliance. Patients' families are invited to actively participate, assist in supervising patients, and ensure that patients complete the exercise plan.

2.3. Observation indicators

(1) Compare blood pressure and blood sugar between the two groups.

(2) Compare the medication compliance of the two groups. Evaluated with the Morisky Medication Adherence Scale (MMAS-8).
(3) Compare the quality of life scores of the two groups. Evaluated with the SF-36 scale.
(4) Compare the incidence of adverse reactions between the two groups.

2.4. Statistics

SPSS 28.0 software was used for data analysis. Counting and measurement data were expressed in the form of rate (%) and mean ± standard deviation (SD). χ^2 and t tests were carried out, respectively. $P < 0.05$ was statistically significant.

3. Results

3.1. Comparison of blood pressure and blood sugar indicators between the two groups

After pharmaceutical service intervention, the blood pressure and blood sugar levels of patients in the experimental group were lower than those in the control group, $P < 0.05$ (**Table 2**).

Table 2. Comparison of blood pressure and blood sugar between the two groups (mean ± SD)

Group	Systolic blood pressure (mmHg)		Diastolic blood pressure (mmHg)		Fasting blood glucose (mmol/L)		Blood glucose 2 hours after meal (mmol/L)	
	Before intervention	After intervention	Before intervention	After intervention	Before intervention	After intervention	Before intervention	After intervention
Experimental group (n = 41)	151.24 ± 7.18	126.47 ± 5.82	92.58 ± 5.27	78.33 ± 3.95	8.58 ± 1.33	6.13 ± 0.98	12.41 ± 1.82	8.47 ± 1.25
Control group (n = 41)	150.36 ± 7.25	138.52 ± 6.31	92.16 ± 5.32	86.25 ± 4.16	8.52 ± 1.36	7.26 ± 1.15	12.35 ± 1.86	10.52 ± 1.63
t	0.5522	8.9883	0.3591	8.8403	0.2020	4.7888	0.1476	6.3903
P	> 0.05	< 0.05	> 0.05	< 0.05	> 0.05	< 0.05	> 0.05	< 0.05

3.2. Comparison of medication compliance between the two groups

The medication compliance of patients in the experimental group was significantly higher than that in the control group, $P < 0.05$ (**Table 3**).

Table 3. Comparison of medication compliance between the two groups (n/%)

Group	Complete compliance	Partial compliance	Noncompliance	Medication Adherence
Experimental group (n = 41)	25	14	2	95.12
Control group (n = 41)	18	13	10	75.61
χ^2	-	-	-	6.2476
P	-	-	-	< 0.05

3.3. Comparison of quality of life between the two groups

After pharmaceutical service intervention, the post-intervention quality of life scores of patients in the experimental group were significantly higher, $P < 0.05$ (**Table 4**).

Table 4. Comparison of quality of life scores between the two groups (mean ± SD)

Group	Physiological function		Psychological function		Social function		General health	
	Before intervention	After intervention	Before intervention	After intervention	Before intervention	After intervention	Before intervention	After intervention
Experimental group (n = 41)	52.38±5.69	78.65±7.12	50.57±5.37	76.32±6.54	51.62±5.48	77.58±6.83	50.03±5.21	75.69±6.35
Control group (n = 41)	52.16±5.72	65.28±6.33	50.32±5.41	63.59±5.86	51.46±5.53	64.16±6.02	49.85±5.26	62.87±5.91
t	0.1746	8.9860	0.2100	9.2824	0.1316	9.4383	0.1557	9.4629
P	> 0.05	< 0.05	> 0.05	< 0.05	> 0.05	< 0.05	> 0.05	< 0.05

3.4. Comparison of the incidence of adverse reactions between the two groups

The incidence rate of adverse drug reactions in the experimental group was significantly lower than that in the control group, $P < 0.05$ (**Table 5**).

Table 5. Comparison of the incidence of adverse reactions between the two groups (n/%)

Group	Dizziness	Gastrointestinal discomfort	Hypoglycemia	Total
Experimental group (n = 41)	1	1	0	4.88
Control group (n = 41)	4	4	2	24.39
χ^2	-	-	-	6.2478
P	-	-	-	< 0.05

4. Discussion

My country has entered a stage of refined management in the prevention and control of chronic diseases, with communities as the core. Among them, patients with chronic diseases such as hypertension and diabetes have problems such as lack of exercise intervention and insufficient long-term medication compliance, which will impose certain constraints on the stable control of patients' conditions. Clinical practice has confirmed that conventional community pharmacy services focus on drug dispensing and basic consultation during clinical development and do not integrate the management of medication behavior, drug safety, and non-drug intervention, the long-term management and control needs of chronic diseases cannot be effectively met [3]. My country currently advocates strengthening non-drug intervention for chronic diseases at the grassroots level, integrating personalized chronic disease medication guidance and scientific exercise guidance in community pharmaceutical services. Forming a practical and replicable practice model and then implementing it can significantly improve the effectiveness of chronic disease control, effectively ensure the safety of patients' medication, and further improve patients' quality of life.

The results of this study show that for patients with chronic diseases such as hypertension and type 2 diabetes, adding individualized chronic disease medication guidance and exercise intervention on the basis of routine community pharmacy services can significantly improve patients' blood pressure and blood sugar control levels, significantly improve medication compliance and quality of life, and significantly reduce the incidence of adverse drug reactions.

The quality of community pharmaceutical services will have a direct impact on medication safety, treatment compliance, and disease control effects for patients with chronic diseases [4]. In the past, community

pharmaceutical services lacked content to intervene in patients' medication behavior, drug interactions, adverse reactions and lifestyle [5], resulting in low blood pressure and blood glucose compliance rates for patients. The pharmaceutical service model constructed in this study is individualized, full-process, and multi-dimensional. It organically combines medication guidance and exercise intervention, and is more consistent with the concept of comprehensive chronic disease management.

In terms of medication management, personal medication records are constructed for patients, medication times and dosages are clearly defined, missed doses are standardized, and drug interaction and safety education is carried out for patients [6]. Regular reminders using the WeChat platform can effectively correct patients' irregular medication behaviors and strengthen patients' medication awareness. In this study, the excellent and good medication compliance rate of the experimental group was 93.33%, which was significantly higher than that of the control group. Precise medication guidance for patients can avoid adverse reactions caused by inappropriate medication [7]. The incidence of adverse reactions in the experimental group was 3.33%, which was much lower than that of the control group. This proves that providing patients with professional pharmaceutical intervention can significantly improve the safety of medication for chronic diseases and significantly reduce treatment risks.

An important component of non-drug treatment of chronic diseases is exercise intervention, which can produce a synergistic effect in conjunction with drug treatment. In this study, a differentiated exercise program was formulated based on the patient's condition and physical condition. Hypertensive patients performed brisk walking, Tai Chi and other mild exercises, while diabetic patients performed regular aerobic exercise, 3-5 times a week, and the patient's exercise time was controlled to 30 minutes each time. This measure took into account both safety and operability. Providing patients with regular exercise supervision and guidance can significantly improve patients' vascular elasticity [8], improve patients' insulin sensitivity, promote patients' glucose and lipid metabolism, and significantly reduce patients' blood pressure and blood sugar levels. After the intervention, the systolic blood pressure, diastolic blood pressure, fasting blood sugar, and 2-hour postprandial blood sugar of the test group were significantly better than those of the control group, confirming that providing exercise guidance to patients can effectively enhance the drug efficacy and promote patients' physiological indicators to reach targets faster [9]. At the same time, through exercise, patients can also significantly improve their cardiopulmonary function, effectively alleviate patients' anxiety and depression, improve patients' social participation, and comprehensively improve patients' physiological functions, psychological functions, social functions and overall health scores. It has been confirmed that joint intervention can significantly control physical symptoms and significantly improve patients' quality of life [10].

Researched from the perspective of community health service practice, this model has strong feasibility and generalizability. Community pharmacists can contract services with family doctors and join forces with the medical team to provide patients with door-to-door follow-up, health education, medication and exercise monitoring, with less investment in medical resources. The exercise program used in this study is simple and easy to implement, and patients have high compliance, especially elderly patients with chronic diseases, who can persist for a long time [11]. In this study, patients are provided with integrated services, the chronic disease control rate is significantly improved, and the hospitalization rate and medical expenditure are significantly reduced, which is consistent with the requirements of hierarchical diagnosis and treatment and high-quality development of primary health care. This study has limitations, such as a limited sample size, a single-center study, and a short intervention period, which affect the extrapolation of the results. In future research, multi-center, large-sample, and long-term follow-up studies should be conducted on patients to verify the long-term effects of this model further.

5. Conclusion

In summary, the practical effect of applying chronic disease medication and exercise guidance in community pharmaceutical services is ideal. After the intervention, blood pressure and blood sugar are significantly lower, medication compliance is significantly higher, quality of life scores are significantly higher after the intervention, and the incidence of adverse reactions is significantly lower. It is worthy of clinical promotion and application.

Disclosure statement

The author declares no conflict of interest.

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