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A Study on The Impact of Health Education Combined with Personalized Psychological Care on Patients with Schizophrenia

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Abstract: *Objective:* This study aims to explore the effects of health education combined with individualized psychological intervention on the condition, social adaptation ability, and quality of life of patients with schizophrenia. *Method:* Schizophrenia patients admitted between January 2023 and January 2025 were included as research subjects. A random number table method was used to divide 90 patients into an intervention group (health education + personalized psychological intervention) and a control group (routine nursing), with an intervention period of 6 months. Two groups of patients were evaluated before and after intervention using the Self-Management Scale for Schizophrenia (SSMIS), Positive and Negative Symptoms Scale (PANSS), Social Function Scale (SSPI), and Quality of Life Scale (SF-36). After 6 months of intervention, the negative symptom scores of the intervention group patients showed a significant decrease compared to the control group ($p < 0.05$); The positive symptom score and SSMIS total score showed significant improvement ($p < 0.001$); In terms of social function and quality of life, the intervention group was also superior to the control group ($p < 0.01$). *Conclusion:* Combining health education with individualized psychological intervention can significantly improve patients' psychological state, enhance their self-management ability, and promote the recovery of their social function. This combined intervention model has high clinical application value.
Keywords: Health education; Social function; Personalized psychological care; Schizophrenia; Quality of life

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1. Introduction

Schizophrenia, as a chronic mental disorder, is characterized by cognitive impairment, emotional apathy, and social behavioral withdrawal, with a global prevalence rate of around 1% [1]. Although drug therapy has achieved certain results in reducing positive symptoms, patients often face the dilemma of low treatment compliance and frequent disease recurrence due to adverse drug reactions, shame caused by the disease, and social function decline [2]. The current nursing practice generally focuses on symptom control, but fails to fully emphasize the comprehensiveness and individualization of psychological intervention, which in turn affects the patient's quality of life and continues to be at a low level [3]. This study innovatively combines health education (i.e. standardized disease knowledge dissemination) with personalized psychological care (stratified intervention based on patient personality traits and disease stages), breaking through the

constraints of traditional simple education or supportive care [4]. At the same time, a collaborative nursing model of "family hospital community" was proposed, aiming to provide a set of replicable and promotable solutions for the rehabilitation nursing of patients with schizophrenia.

2. General information

2.1. Basic information

This study included 90 patients with schizophrenia who received treatment at our hospital between January 2023 to January 2025.

2.1.1. Selection criteria

(1) Meet the diagnostic criteria of the International Classification of Diseases, 10th edition (ICD-10);
(2) The disease course ranges from 1 to 5 years;
(3) The total score of the Positive and Negative Symptoms Scale (PANSS) ranges from 60 to 90 points;
(4) Signed the informed consent form.

2.1.2. Exclusion criteria

(1) Having serious physical illnesses;
(2) History of substance abuse;
(3) Subjects currently participating in other clinical trials.

2.1.3. Grouping

Using the random number table method, these patients were assigned to an intervention group and a control group, with 45 cases in each group. Statistical analysis shows that there is no significant difference in baseline data between the two groups of patients ($p > 0.05$), as detailed in **Table 1**.

Table 1. Basic information

Group	n	Gender (n)		Age (years)	Disease duration (years)
		Male	Female		
Intervention group	45	24	21	44.62 ± 7.13	4.14 ± 0.37
Control group	45	20	25	43.91 ± 7.08	4.09 ± 0.42
χ^2/t		0.025		0.300	0.300
p		0.874		0.764	0.764

2.2. Research methods

2.2.1. Control group

The routine nursing plan includes standardized medication treatment and basic nursing services, including daily life care, safety monitoring, and medication supervision.

2.2.2. Intervention group

(1) Health education program

① Content: including disease-related knowledge (such as etiology and the effects and side effects of drugs), identification of recurrence precursors, and self-management skills (including emotional recognition and

medication self-management). ② In terms of format, it adopts twice weekly group lectures (combined with PPT presentations and video playback), customized graphic manuals, and training that encourages family participation. Using the "teaching learning feedback" teaching method, each lecture lasts about 30 minutes, twice a week. ③ Education based on patient staging: Acute phase (PANSS score ≥ 75): Through illustrated manuals, videos, and 3D animations, explain the mechanism of action of the drug (such as how olanzapine blocks dopamine D2 receptors) and coping strategies for side effects (such as taking ice cream when dry mouth and increasing dietary fiber intake when constipation). Relief period (PANSS score < 75): Conduct scenario simulation training and real-life problem-solving training (such as simulating the use of public transportation cards and supermarket shopping). ④ Collaborative education for family members: Hold monthly workshops for family members to guide them in mastering drug supervision skills (such as identifying patients' drug hiding behavior), as well as learning communication skills for emotional comfort (avoiding the use of labeled language such as "mental illness").

(2) Personalized psychological intervention measures

① Integrated psychotherapy: Combining motivational interviewing (MI) and focused short-term therapy (SFBT) techniques, personalized counseling is conducted once a week. The key is to build a "personal advantage record" (such as recording a patient's manual skills or sense of family responsibility); Set progressive goals (such as having a weekly phone call with family); Using the 'miracle questioning' technique to stimulate patients' intrinsic motivation for recovery. ② Layered psychological intervention: For those with high levels of anxiety, mindfulness-based stress reduction training is used, with two 10-minute breathing concentration exercises per day, supplemented by natural environmental sound effects, three times a week. For those with lower motivation levels: Implement behavior activation therapy, set quantifiable phased goals (such as completing one household chore per day in the first week and increasing to two in the second week), and combine incentives from family members. Individuals with obvious social anxiety: Conduct role-playing and progressive social exposure training, using virtual reality (VR) technology to simulate scenarios such as shopping in supermarkets and taking public transportation, gradually increasing the complexity of social scenes, three times a week for 20 minutes each time.

(3) Family community integration support network

① At the family level, family members receive training on the "Four Steps of Nonviolent Communication", namely "Observation Perception Needs Request", aimed at promoting effective communication and reducing the use of accusatory language. ② At the community level, community social workers plan weekly "simulated employment" experience activities, such as handmade soap making and gardening management, to provide practical opportunities for rehabilitation patients. At the same time, monthly "experience sharing sessions" are held, where patients showcase stress coping techniques such as deep breathing and progressive muscle relaxation through role-playing.

(4) Periodic rehabilitation training program

① Acute phase intervention stage (0–4 weeks of hospitalization): During this stage, rapid adjustment of drug dosage is implemented (for example, the initial dose of olanzapine is 10 mg/day and adjusted to the target therapeutic dose within 3 days); At the same time, conduct 30 minutes of daily life skills training. ② Recovery support phase (1–6 months after discharge): Community nursing staff conduct monthly home visits and use the Social Functioning Inventory (SSPI) to assess patients' social skills. ③ Stable consolidation stage (6 months after discharge): The patient will share their rehabilitation experience in a health lecture organized by the community; In addition, establish a digital management platform for "health records" to automatically push medication reminders and follow-up appointments.

2.3. Observation indicators

Compare the Self-Management Scale for Schizophrenia (SSMIS), Positive and Negative Symptoms Scale (PANSS), and Social Function Scale (SSPI) before and after intervention, and compare the Quality-of-Life Scale (SF-36) after

intervention.

2.4. Statistical processing

This study used SPSS version 26.0 statistical software for data analysis, with a significance level of 0.05. If the p value is less than 0.05, it is considered that the difference between groups is statistically significant. The data description uses statistical measures such as mean, standard deviation, and percentage, while inter group comparison uses independent sample t-test and chi square χ^2 test methods.

3. Results

3.1. Disease related scoring

According to **Table 2**, compared to the control group, the intervention group showed an increase in PANSS positive and SSMIS scores ($p < 0.05$), while the PANSS negative score decreased ($p < 0.05$).

Table 2. Disease related scores ($\bar{x} \pm s$, points)

Group	n	SSMIS		PANSS positive		PANSS negative	
		Pre-intervention	Post-intervention	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
Intervention group	45	66.92 ± 11.37	85.92 ± 2.69	26.52 ± 4.26	38.62 ± 2.37	40.03 ± 1.36	19.12 ± 2.57
Control group	45	66.75 ± 11.42	75.62 ± 3.74	26.31 ± 4.52	32.64 ± 2.13	40.35 ± 1.32	29.59 ± 3.02
t		0.071	28.685	0.227	12.589	1.132	17.711
p		0.974	< 0.001	0.821	< 0.001	0.260	< 0.001

3.2. Social function

According to the data analysis in **Table 3**, the intervention group showed an improvement in social function compared to the control group ($p < 0.05$).

Table 3. Social function ($\bar{x} \pm s$, points)

Group	n	Daily living ability		Mobility and social situations		Social activity skills	
		Pre-intervention	Post-intervention	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
Intervention group	45	6.26 ± 1.17	10.95 ± 0.85	6.99 ± 1.16	15.98 ± 1.12	7.25 ± 1.08	13.26 ± 1.11
Control group	45	6.71 ± 1.09	7.26 ± 1.03	6.97 ± 1.22	10.82 ± 1.85	7.33 ± 1.12	9.97 ± 1.09
t		1.888	18.536	0.080	16.006	0.345	14.187
P		0.706	< 0.001	0.937	< 0.001	0.731	< 0.001

3.3. Quality of life

According to the results in **Table 4**, compared to the control group, the intervention group had a better quality of life ($p < 0.05$).

Table 4. Quality of life ($\bar{x} \pm s$, points)

Group	n	Physiological function	Health condition	Emotional function	Physiological function	Social function	Mental health	Pain
Inter-vention group	45	74.59 ± 12.48	77.26 ± 13.11	72.64 ± 10.52	71.56 ± 11.18	72.29 ± 10.67	69.36 ± 11.85	70.06 ± 9.84
Control group	45	61.95 ± 12.26	63.82 ± 12.07	60.95 ± 10.93	60.09 ± 10.56	61.56 ± 10.86	53.86 ± 11.92	60.97 ± 10.52
t		4.512	4.710	4.812	4.658	4.401	5.759	5.840
p		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

4. Discussion

Schizophrenia is a serious mental disorder with a chronic course and high disability. The number of patients in China exceeds 8 million, accounting for about 20% of the global total [5]. The core symptoms of this disease include positive symptoms (such as hallucinations and delusions), negative symptoms (such as emotional apathy and social withdrawal), and cognitive dysfunction, which severely impair the patient's social functioning [6]. Currently, drug therapy remains the main intervention for schizophrenia, but its limitations are gradually becoming apparent. About 50% of patients will stop taking medication on their own within one year of treatment due to side effects or shame caused by the disease, thereby increasing the risk of recurrence [7]. Even if symptoms are relieved, only 35% of patients can recover to their pre illness social roles [8]. The traditional nursing model mainly focuses on symptom control and medication supervision, often ignoring the psychological needs of patients and individual differences [9].

The health education in this study focuses on enhancing disease awareness and self-management skills, particularly in identifying recurrence warnings. The educational content is automatically adjusted based on the dynamic changes in PANSS scores (acute phase score ≥ 75 points, remission phase score < 75 points), thus overcoming the inefficiency of traditional "one size fits all" education. Adopting a "staged matching" strategy, such as using 3D animation to display drug metabolism processes during the acute phase, aims to alleviate information processing barriers faced by patients due to cognitive impairment through visual means. Related studies have pointed out that the prefrontal cortex function of patients with schizophrenia is insufficient, which affects abstract thinking and executive function [10]. Multimedia teaching can activate the visual joint cortex, promote the internalization and absorption of knowledge through the "dual channel encoding" mechanism, and may indirectly stimulate the functional connections of the PFC striatal loop, thereby enhancing patients' drug management abilities. Health education enhances patients' rational understanding of diseases and reduces their sense of shame through systematic dissemination of disease knowledge, such as etiology, drug action mechanisms, and recurrence warning signals. This process can activate the cognitive control function of the prefrontal cortex, thereby reducing anxiety and resistance caused by incorrect attribution. Personalized psychological care is divided into three categories based on the different characteristics of patients: high anxiety type, low motor type, and social anxiety type, and is treated with mindfulness training, behavioral activation therapy, and social exposure training, respectively. These intervention measures help to reduce the levels of stress hormones (such as cortisol) and enhance emotional regulation ability by regulating the amygdala hippocampus circuit. In personalized psychological care, the setting of "small step goals" (such as completing one social task per week) is based on the theory of operant conditioning, gradually reconstructing the patient's behavioral patterns through positive reinforcement (such as immediate feedback from nurses, family rewards). This process may increase the gray matter volume of the dorsolateral prefrontal cortex (DLPFC), thereby improving decision-making and planning abilities. Integrating families into the psychological care system (such as involving family members in the goal setting process) can enhance patients' sense of social belonging. The emotional support provided by family members can increase the concentration of oxytocin in the patient's serum, thereby

enhancing their treatment compliance; Community vocational training improves patients' motivation deficit by activating the dopamine pathway in the striatum. This synergy has broken through the single mode of traditional nursing and built a multi-dimensional intervention network. Continuous behavioral training, such as social exposure training and life skills development, promotes the reorganization of brain function. Taking social anxiety patients as an example, progressive exposure therapy can strengthen the functional connection between the anterior cingulate gyrus and insula, effectively reducing social avoidance behavior; Meanwhile, life skills training enhances the coordination and executive function of movements by strengthening the cerebellar basal ganglia pathway.

In summary, health education and personalized psychological care have significant effects in improving patients' symptoms, as well as enhancing their social functioning and quality of life. Therefore, they have high clinical application and promotion value.

About the author

Cao Lifang, born in 1979, female, Han, from Nanjing, Jiangsu, holds a bachelor's degree and is a deputy chief nurse. Her research direction is nursing.

Disclosure statement

The author declares no conflict of interest.

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