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Application of Full Disease Course Management via Internet Platform in Rehabilitation Management of Patients with Depression

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Abstract: *Objective*: To observe the application effect of full disease course management via an internet platform in the rehabilitation management of patients with depression. *Methods*: Eighty patients with depression meeting the inclusion criteria were selected as the study subjects and randomly divided into an experimental group and a control group, with 40 patients in each group. The control group was followed up every 4 weeks for 12 weeks after discharge. The experimental group underwent full disease course management via an internet platform for 12 weeks after discharge. The quality-of-life scores, depression scores, medication compliance, insight and treatment attitude questionnaire scores, and self-efficacy scores were compared between the two groups. *Results*: After 12 weeks of follow-up, the experimental group had higher quality-of-life scores, lower depression scores, higher medication compliance, higher insight and treatment attitude scores, and higher self-efficacy scores than the control group ($P < 0.05$). *Conclusion*: Full disease course management via an internet platform has a positive impact on the quality of life, medication compliance, self-efficacy, and disease stability of discharged patients with depression.

Keywords: Internet; Full disease course management; Depression

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1. Introduction

Depression is a psychological disorder that is clinically characterized by persistent low mood and is prone to recurrent episodes. It is difficult to treat and can affect patients' thinking, behavior, and feelings, not only impacting their daily life and work but also potentially leading to self-harm and suicidal behavior in severe cases [1]. Clinically, to control the progression of the disease, patients generally need to take antidepressants for a long time. However, patient compliance is often poor, making it difficult to adhere to medication, which affects the recovery of the disease and imposes a serious burden on families and society. Improving patients' awareness of the disease, strengthening self-management, and improving compliance are beneficial to the prognosis of patients. Therefore, effective nursing

intervention and guidance outside the hospital are needed for these patients [2]. Full disease course management refers to the establishment of case files by medical staff, strengthened case tracking and guidance services after discharge, and the provision of individualized medical, psychological, and social services to patients [3,4]. Full disease course management originates from social work practices and is based on the long duration of depression. In daily life, patients need to face pressure from external environments such as family, work, or study, and the disease can lead to decreased cognitive and social functioning. Through full disease course management, patients' independence can be improved, helping them better cope with stress, improve compliance, and enhance social functioning. By implementing full disease course management, hospitals can provide continuous care and personalized treatment, thereby improving communication between doctors and patients, utilizing early intervention pathways to prevent recurrence, enhancing patients' treatment efficacy, and promoting recovery. Simultaneously, full disease course management is also significant in popularizing medical knowledge, saving medical, family, and social resources, and improving patients' quality of life. In this study, the effect of full disease course management via an internet platform in the rehabilitation management of discharged patients with depression was investigated, and the results are reported below.

2. Materials and methods

2.1. Study subjects

Eighty patients with depression who were hospitalized, treated, and discharged from our hospital from June 2023 to August 2024 were selected as the study subjects. All patients voluntarily participated in the study and signed informed consent forms. They were randomly divided into a control group and an experimental group using a random number table method, with 40 patients in each group. There were no statistically significant differences in general characteristics such as gender, age, ethnicity, and marital status between the two groups ($P > 0.05$). See **Table 1**.

Table 1. General information of patients in the two groups

Variable		Experimental group ($n = 40$)	Control group ($n = 40$)	t/χ^2	P
Age		39.10 ± 14.50	39.78 ± 16.41	0.196	0.960
Gender	Male	5	6	0.105	0.745
	Female	35	34		
Household registration	City	17	14	0.474	0.491
	Countryside	23	26		
Marital status	Unmarried	11	11	4.000	0.262
	Married	23	23		
	Divorced	3	6		
	Widowed	3	0		
Education level	Primary school and below	8	8	3.034	0.386
	Junior high school	13	16		
	High school/Secondary school	8	11		
	College and above	11	5		

Table 1 (Continued)

Variable		Experimental group (n = 40)	Control group (n = 40)	t/χ^2	P
Occupation	Student	5	4	0.247	0.884
	Working	18	20		
	Others	17	16		
Source of medical payment	Self-pay	2	2	1.324	0.516
	Medical insurance for urban and rural residents	18	23		
	Employee medical insurance	20	15		
Monthly household income	Less than or equal to 3000	1	5	3.174	0.205
	3000–5000	9	10		
	Greater than or equal to 5000	30	25		
Number of depressive episodes	First time	8	9	0.850	0.654
	Twice	10	13		
	Three times and above	22	18		

Inclusion criteria: (1) Meet the diagnostic criteria for depression in the 10th edition of the International Classification of Diseases (ICD-10); (2) Obtain informed consent from the patient and guardian; (3) Have a smartphone and know how to use software such as WeChat and QQ. Exclusion criteria: (1) Patients with other mental illnesses; (2) History of drug abuse; (3) Mental retardation; (4) Accompanied by severe physical illness or organic brain disease. Dropout criteria: Patients who automatically request to withdraw from the study or are lost to follow-up during the study period.

2.2. Research methods

The control group received conventional drug treatment, physical therapy, psychological therapy, and related nursing health education, and was followed up every 4 weeks for 12 weeks after discharge.

The experimental group underwent full disease course management via an internet platform based on the control group and was followed up for 12 weeks after discharge. The implementation details are as follows: (1) During the follow-up period after discharge, patients were provided with relevant knowledge about depression, treatment measures (including drugs, physical therapy, psychotherapy, relaxation training, etc.), and recovery knowledge once a week, and regular assessments were conducted. (2) After admission, according to the specific situation of each patient, the staff formulated a precise treatment plan, established a health file, recorded the patient's basic information, each psychological scale evaluation situation, the current patient treatment plan, treatment effect, the next evaluation time, and other information. (3) A "Self-Management Manual" was established for patients, which mainly focuses on items that patients need to achieve and record, including emotion diaries, weekly emotion change tables, drug self-management tables, life schedules, etc., and feedback was provided every week. (4) Medical staff provided timely responses to relevant questions raised by patients during the study period through mobile internet social tools. (5) The staff regularly reminded discharged patients to return to the clinic for follow-up. (6) Mobile internet social tools were used to conduct brief follow-ups on patients every 4 weeks after discharge, summarize recent problems encountered by patients, and encourage patients to cultivate

interests and hobbies, participate in social activities, and guide patients to confide through social networks. Follow-up frequency was increased for those with fluctuating conditions, and if necessary, hospitalized again for treatment.

2.3. Observation indicators

(1) Short Form 36 Health Survey (SF-36): Assessment was conducted through eight aspects, including physiological function, psychological role, and general health status, all with a score of 100, scored positively.

(2) Self-Rating Depression Scale (SDS): Developed by Zung, the scale consists of 20 items, each with four rating levels. The standard score is 53, and depression is scored positively.

(3) Morisky Medication Adherence Scale (MMAS-8): This consists of eight items, with a maximum score of eight. A score below six indicates low adherence, 6–7 indicates moderate adherence, and above seven indicates high adherence.

(4) Insight and Treatment Attitude Questionnaire (ITAQ): This consists of 11 items, using a 0–2 three-level scoring system. The score range is 0–22, and the higher the score, the more complete the insight.

(5) General Self-Efficacy Scale (GSES): It contains 10 items, using a 4-level scoring method. The sum of the item scores is the total score of the scale. The higher the total score, the better the self-efficacy.

2.4. Statistical analysis

Data were analyzed using SPSS 23.0 software. Measurement data were represented by and compared using two independent sample *t*-tests; $P < 0.05$ was considered statistically significant.

3. Results

3.1. Comparison of SF-36 scale scores between the two groups

There was no statistically significant difference in SF-36 scale scores between the two groups before intervention ($P > 0.05$). After intervention, the experimental group scored higher than the control group ($P < 0.05$). See **Table 2**.

Table 2. Comparison of SF-36 scale scores between the two groups of patients (mean ± standard deviation [SD], scores)

Group	n	Before intervention	After intervention	*t*-value	*P*-value
Control group	40	403.17 ± 115.39	383.46 ± 122.88	5.365	0.000
Experimental group	40	399.07 ± 130.99	461.61 ± 108.40	-7.697	0.000
t-value		-0.148	3.016		
P-value		0.883	0.003		

3.2. Comparison of SDS scale scores between the two groups

There was no statistically significant difference in SDS scale scores between the two groups before intervention ($P > 0.05$). After intervention, there was a statistically significant difference in SDS scale scores between the two groups ($P < 0.05$). See **Table 3**.

Table 3. Comparison of SDS scale scores between the two groups (mean ± SD, scores)

Group	*n*	Before intervention	After intervention	*t*-value	*P*-value
Control group	40	56.15 ± 11.42	61.35 ± 10.34	-2.713	0.01
Experimental group	40	55.13 ± 12.14	52.60 ± 7.87	1.109	0.274
t-value		-0.389	-4.259		
P-value		0.698	0.000		

3.3. Comparison of ITAQ scale scores between the two groups

There was no statistically significant difference in ITAQ scale scores between the two groups before intervention ($P > 0.05$). However, after intervention, there was a statistically significant difference in ITAQ scale scores between the two groups ($P < 0.05$). See **Table 4**.

Table 4. Comparison of ITAQ scale scores between the two groups (mean ± SD, scores)

Group	*n*	Before intervention	After intervention	*t*-value	*P*-value
Control group	40	17.83 ± 3.23	17.53 ± 3.05	0.506	0.616
Experimental group	40	18.20 ± 3.44	19.68 ± 3.10	-3.375	0.002
t-value		0.503	3.124		
P-value		0.617	0.003		

3.4. Comparison of GSES scale scores between the two groups

Before intervention, there was no statistically significant difference in GSES scale scores between the two groups ($P > 0.05$). However, after intervention, there was a statistically significant difference in GSES scale scores between the two groups ($P < 0.05$). For the control group, there was no significant difference in GSES scale scores before and after intervention ($P > 0.05$), while for the experimental group, there was a statistically significant difference in GSES scale scores before and after intervention ($P < 0.05$). See **Table 5**.

Table 5. Comparison of GSES scale scores between the two groups (*n*, mean ± SD)

Group	*n*	Before intervention	After intervention	*t*-value	*P*-value
Control group	40	26.13 ± 4.72	26.45 ± 4.95	-0.453	0.653
Experimental group	40	26.05 ± 5.51	32.55 ± 3.15	-8.286	0.000
t-value		-0.065	6.577		
P-value		0.948	0.000		

3.5. Comparison of MMAS-8 scale scores between the two groups

There was no statistically significant difference in MMAS-8 scale scores between the two groups before intervention ($P > 0.05$). However, after intervention, a statistically significant difference in MMAS-8 scale scores was observed between the two groups ($P < 0.05$). See **Table 6** for details.

Table 6. Comparison of MMAS-8 scale scores between the two groups (*n*, mean ± SD)

Group	*n*	Before intervention	After intervention	*t*-value	*P*-value
Control group	40	4.73 ± 1.12	5.62 ± 0.85	-8.295	0.000
Experimental group	40	4.68 ± 1.35	6.58 ± 1.13	-11.888	0.000
t-value		-0.18	4.279		
P-value		0.857	0.000		

4. Discussion

Currently, the incidence of depression is increasing year by year, which may be related to various factors such as genetics, psychology, and environment [5]. Depression not only affects the psychological state and quality of life of the patients themselves, but also poses risks such as violence and aggression to their families. Moreover, depression has a long duration, is prone to recurrent episodes, and is difficult to completely cure. Therefore, it is very important to actively adopt corresponding drug, physical, and psychological treatments during hospitalization, as well as to provide treatment and care for patients after discharge [6,7]. After inpatient treatment, patients' depressive symptoms have improved significantly compared to before hospitalization. However, when they encounter stressful events again in life, work, or study, patients are still prone to develop depressive emotions, leading to worsened conditions and even requiring re-hospitalization. Additionally, some patients have poor treatment compliance due to a lack of disease knowledge, and they may reduce medication, stop medication, or fail to return for follow-up visits after symptomatic improvement, which increases the risk of disease recurrence [8].

Full disease course management via an internet platform can provide continuous care for patients without being limited by time and location, enabling timely and effective delivery of disease treatment and recovery knowledge. It strengthens communication and exchange with patients, allows early detection of changes in patients' conditions, promptly reminds patients of follow-up visits, and provides timely answers to patients' questions about the treatment process [9].

The results of this intervention showed that through full disease course management via an internet platform, the experimental group scored better on various scales compared to the control group. This indicates that full disease course management via an internet platform is beneficial for patients' rehabilitation management outside the hospital and has a positive impact on the quality of life, medication compliance, self-efficacy, and stability of depressive symptoms in patients with depression.

5. Conclusion

In summary, full disease course management via an internet platform plays a positive and effective role in the rehabilitation management of patients with depression.

Disclosure statement

The authors declare no conflict of interest.

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