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Medication and Symptom Management Education Program for the Rehabilitation of Psychiatric Patients in Korea: The Effects of Promoting Schedule on Self-efficacy Theory

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An effective rehabilitation program was developed for psychiatric patients' self-management of medication and symptoms. The rehabilitation program was designed to allow the patients to understand their illness, cope with their medical regimen, and prevent a relapse by recognizing any of the symptoms when they recur.

This study consisted of three phases. The first phase was to explore the extent and the specific mental health needs of psychiatric patients. Data was obtained from 82 subjects who had symptoms of a mental illness including schizophrenia, bipolar disorders, and delusional disorder. They had received medication instruction during their hospitalization. The subjects were at the time outpatients in a psychiatric hospital. In the second phase, the researchers developed an educational program focused on coping with the residual and relapse warning signs, managing the drug side effects, medication compliance, and daily routines, according to the information acquired in the first step. The developed program includes the self-efficacy method reported by Bandura, including manuals and videotapes focusing on real life situations, small group discussions, and telephone coaching. Finally, the researchers investigated the effects of this program. Thirty-eight patients were selected for this study, 18 in the experimental program and 20 as controls. The diagnoses were same as those with the first step.

The results showed that the subjects who attended this educational program reported significantly more improvement in self-efficacy (p=0.014) and medication compliance (p=0.005), and significantly less relapse warning symptom scores (p=0.000) than the controls.

In conclusion, these instructional materials will be beneficial for medication and symptom management in rehabilitating psychiatric patients in Korea. In addition, the materials may be a useful psychoeducational resource for professionals in the field of clinical psychiatry.

Key Words: Psychiatric rehabilitation, medication and symptom management, self-efficacy

INTRODUCTION

Major psychotic disorders such as schizophrenia are currently regarded as brain diseases. They are thought to occur through a compound interaction of biological and environmental factors, and usually run the chronic course of waxing and waning.[1-3] Pharmacotherapy is central in treating patients with psychotic disorders, and the long-term maintenance of pharmacotherapy is very important for preventing a recurrence of the illness and the resulting re-hospitalization.

However, high rates of treatment noncompliance have been observed in many mental health service settings. Noncompliance has many causes: unpleasant or adverse effects, the fear of addiction, residual symptoms of the psychiatric disorders, a failure of return to the premorbid levels of functioning after treatment, and a denial of the illness.[4-6] One researcher reported that most psychiatric disorders were strongly related to medication compliance. When patients are aware of their illness and the necessity of medication to

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control their symptoms, their adherence to treatment will be better.[7] Psychiatric patients tend to be unaware of their illness and even misinterpret their symptoms, often ascribing them to something unknown. The reduced severity of symptoms is sometimes considered to be a complete cure. The understanding of the cause, course, treatment and prognosis of the suffered disorders by the patients themselves is reciprocally related to the treatment compliance, in particular medical treatment.[8-11]

Many researchers have attempted to develop relapse prevention programs that include schedules of psychoeducation on the psychiatric disorders and their treatment strategies as a means of helping patients manage their illness themselves.[12-18] In Korea, the necessity of a multidimensional approach for treating psychiatric disorders is emphasized. It has been argued that the patient must be included as an active part of his treatment program. Therefore, it is strongly recommended that concrete methods be presented to patients in order for them to properly manage themselves.

Although the necessity for such a program is clear, a patient education program in Korea, either for clinical management or for theoretical research, is not well developed. Furthermore, it has been reported that only 4.9% of 68 psychiatric hospitals and psychiatric wards provide systematic patient education. Almost every treatment team now recognizes the importance of patient education programs for the rehabilitation of psychiatric patients. Because they are urged to accommodate the program in any form, hospitals opt for a low cost and easy to accommodate educational program.[19]

There are some problems in applying modified programs, from such as the Liberman model. Firstly, the manual is not so specific, leaving the care giving psychiatrists and nurses uncertain of their roles. Second, the social and cultural background inherent in this program is vastly different from that compatible with Korean culture. Furthermore, the effectiveness of this program has never fully been tested and evaluated in Korean patients.

One study pointed out that there are few reports that approve of medication and symptom management education as an important factor in promoting medication compliance and preventing an expected relapse.[20] Another report also pointed that although medication and symptom management education may increase a patient's awareness of their illness, it does not necessarily follow that patients will, as a result, be more vigilant in complying with their medical regimen and treatment. However, that report emphasized the importance of the patients having faith, or conviction, in the treatment course.[21] Later, the use of positive activities such as learning repetition exercises and role playing to supplement the deficiencies in cognitive functions exhibited by patients suffering from psychiatric disorders such as schizophrenia can be included.[22] This method is particularly suitable for Korean psychiatric patients who tend to be passive, and show little confidence in education programs, because they are accustomed to a self-restraining culture. For this reason, a patient education program for Korean psychiatric patients needs be based on a refined theory such as self-efficacy.

Bandura defined self-efficacy as a self-referee in thinking between knowledge and behavior. It is a major factor in deciding how to act, how much medication to take, and how long to take it.[23-26] It can thus be used as a forecasting tool to predict behavior. Self-efficacy is also a psychosocial factor in learning theory.[27] It can be applied to managing psychiatric patients. For relapse prevention, there is always a need to manage and control a patient's behavior. To manage relapse, patients should have specific coping strategies, which are developed from past personal accomplishments, vicarious experiences, emotional arousal, and verbal persuasion. A successful treatment regimen depends on the patient's confidence in managing him/herself with a high degree of self-efficacy.[19]

This study attempted to develop and promote an education program for medication compliance and symptom management through a multidisciplinary approach based on Bandura's self-efficacy theory. The goal in this study was to test the effectiveness of this program and to present it as another useful psychoeducation program model for rehabilitating psychiatric patients in Korea.

MATERIALS AND METHODS

Subjects

The research team randomized the recruitment of subjects. The subjects had been diagnosed and treated for schizophrenia, mood disorders and delusional disorders according to DSM-IV by psychiatrists. They had been hospitalized in a psychiatric hospital in Busan and subsequently discharged. Among the 53 outpatients, 40 were randomized after receiving their approval. Twenty were classified in the experimental group, and 20 were placed in the control group. During this process, 2 patients in the experimental group were excluded, leaving a final total of 18 in the experimental group.

Methods

The procedures of this study consisted of three phases of progression. The first phase explored the extent and the specific needs of the psychiatric patients in Korea. The second phase involved the development of a medication compliance and symptom management program. Finally, the developed program was evaluated for its efficacy

Procedures

1st Phase

Field research was first conducted. In order to determine the appropriate content for an educational program, a questionnaire was distributed to the psychiatric patients to gain data on the following: 1) Their level of knowledge regarding medicine, 2) Their level of knowledge on the cause of their disorders and their corresponding symptoms, 3) Attitude toward taking medication and their ability to perceive disorders, 4) Any difficulties in taking medication and any subjective discomfort and impairment due to illness, 5) Coping strategies.

The first draft of the questionnaire was pretested among the 20 psychiatric patients and was revised through interviews with the research participants and their families. The final version was made after discussions among the research team.

Eighty two psychiatric patients were recruited for our preliminary research. They were all at one time treated at a psychiatric hospital located in Busan. All the patients suffered from either schizophrenia, mood disorders or other psychotic disorders such as delusional disorder. They had received psychiatric treatment and were discharged from the hospital. The subjects all had experience with some form of medication and symptom management education as either inpatients or as day hospital outpatients.

The content for the self-management education program was determined upon an analysis of the questionnaire. The most pressing needs the program addressed were as follows: giving patients relapse prevention knowledge; educating the patients about their disease, the prescribed medication and its side effects; educating the patients of the chronic symptoms and offering them coping strategies; educating the patients of the critical necessity of taking their medication; overcoming the patients' unwillingness to take medication; offering coping strategies to deal with the side effects of medication; educating the patients about the relapse warning symptoms and offering effecting coping strategies.

2nd Phase

The results of the first phase and remarks in the literature were incorporated in the development of a medication and symptom management educational program. The elements that appeared to hinder medication compliance and symptom management were analyzed on the basis of the results of the first phase and previously published reports.

The program was designed to be as specific and as practical as possible in order to offer the most benefit to the patients. The entire program consisted of 12 sessions that could be classified in to four categories: 1) Group greeting and friendship, and the introduction of the psychiatric disorders, 2) Symptom education and recognition of the disorders, 3) The favorable and adverse effects of medication 4) Relapse.

As teaching methods, self-efficacy information resources such as instructional videos, small group discussions, and telephone coaching were adopted to supplement the cognitive deficiencies in patients in order to maximize the effects of the program. Instructional videos were developed by our research team, which are fictional dramas

consisted of successful and unsuccessful situations in medication compliance and symptom management.

3rd Phase

In the final phase of this study, an investigation was conducted to determine the efficacy of the developed medication and symptom management program. Testing was conducted using a nonequivalent control group, and a pre-post test design (Fig. 1).

The education program comprised of 12 sessions, with each session lasting approximately 70 minutes. The contents of the program are summarized in Table 1. The first six sessions were about recognizing the symptoms and various coping strategies. The following three sessions were about reinforcing knowledge concerning medication, medication use, and coping with the side effects. The last three sessions concerned the relapse warning symptoms and coping skills.

Two psychiatric nurses and 2 social workers performed the education sessions. The staff was trained for education in a very specific manner. Educational methods including instruction, showing video dramas, small group discussion, and telephone advice were employed as the self-efficacy resources. In addition, stress management techniques were provided so that the patients could be compliant along with pharmacotherapy and alleviating hyperarousal.

Measurements

The following measurements were made: 1) The medication use scale was presented to patients to know how well patients take their medicine. They were asked to mark 0, if patients never took the medicine prescribed, and mark 100 if they always took their medicine as prescribed.[28] 2) The relapse symptom measurement (Cronbach's alpha 0.85), which was originally developed at UCLA by Liberman and translated into Korean with 42 questions regarding the subjective symptoms, was used.[17,19] 3) The scale for family support in medication compliance was presented to patients to determine how they take medicine on their own initiative. They were asked to mark 1 if family never helped patients to take medicine as prescribed, and to mark 5 if their family always helped them to take medicine as regularly as prescribed.[28] 4) The 10 item self-efficacy measurement (Cronbach's alpha 0.83), which was developed by our research team, was used in conjunction with the Likert scale to assess the level of confidence with which the psychiatric patients manage their medication regimen and symptoms.

The data was retrieved by distributing the questionnaires to the experimental and control groups before and after the education program.

Statistical analysis

In the first step, the Chi-Square test and t-test was used to identify the general characteristics and homogeneity of the experimental and control groups. The Wilcoxon rank sum test was adopted in the next stage to identify the homogeneity of the two groups before the medication and symptom

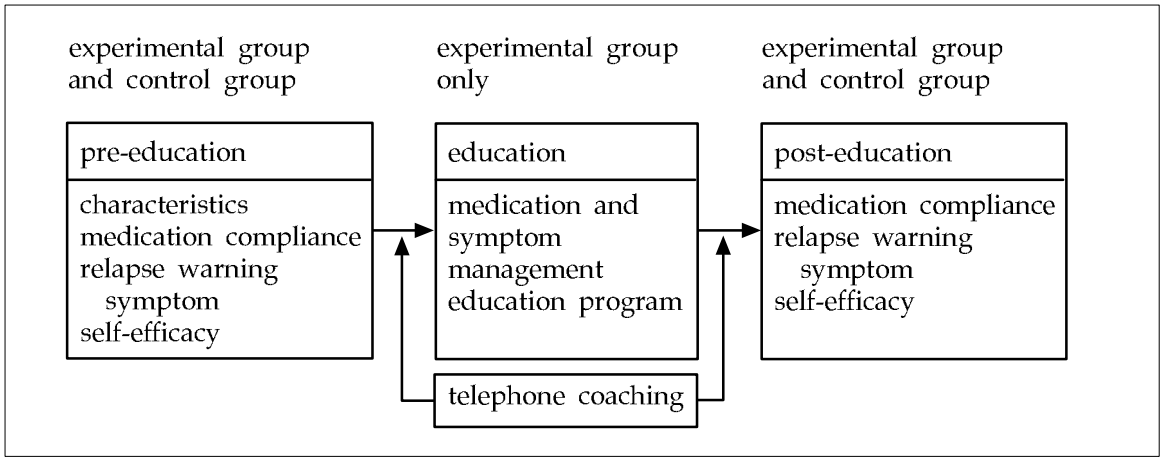

Fig. 1 Nonequivalent control group in the pre-post test design.

Table 1. Construction of the Program

Sessions	Objective	Curriculum	Methods	Self-efficacy resources
1	· Friendship · Introduction of the program · Providing information on psychiatric disorders	· Self-introduction · Orientation · Causes of the mental disorder · Explanation of the program group rule · Sharing experience	· Instruction · Small group discussions	· Performance accomplishments
2	· Providing symptom information about hallucinations, delusions and coping methods	· A brief review of previously learned materials · Hallucinations, delusions and coping methods · Sharing experience	· Instruction · Small group discussions	· Performance accomplishments
3	· Providing symptom Information on negative symptoms and coping methods	· A brief review of previously learned materials · Negative symptoms and coping methods · Sharing experience	· Instruction · Small group discussions	· Performance accomplishments
4	· Information on continuing symptoms and coping methods	· A brief review of previously learned materials · Residual symptom and coping methods · Finding residual symptoms · Sharing experience	· Instruction · Video Ⅳ: episode 1, 2 · Small group discussions · Telephone	· Performance accomplishments · Vicarious experiences · persuasion
5	· Developing skills to recognize symptoms	· Concept and importance of disease recognition · Report on a case history · Effective method of prevent a relapse · Sharing experience	· Instruction · Video Ⅲ: episode 1 · Small group discussions	· Performance accomplishments · Vicarious experiences
6	· Information on effect of medication, inspiration of medication	· Importance of maintaining antipsychotic medication · Sharing experience	· Instruction · Video II: episode 1, 2 · Small group discussions	· Performance accomplishments · Vicarious experiences
7	· Side effects of medication and coping methods	· Causes and types of side effects · Coping methods · Identifying side effects · Sharing experience	· Instruction · Video Ⅰ : episode 1-3 · Small group discussions	· Performance accomplishments · Vicarious experiences
8	· Knowledge about medication and medication compliance strategy	· Proper medication use · Discuss difficult situations in taking medication · Sharing experience	· Instruction · Video Ⅲ: episode 2 · Small group discussions · Telephone	· Performance accomplishments · Vicarious experiences · Persuasion
9	· Information on the disorder cycle and relapse prevention strategy	· A brief review of previously learned materials · Concept and causes of a relapse · Importance of relapse prevention · Sharing experience	· Instruction · Small group discussions	· Performance accomplishments
10	· Knowledge about stress and coping methods · Exercise therapy	· Stress and coping method · muscle relaxation	· Instruction · Small group discussions · Practice	· Performance accomplishments
11	· Knowledge about relapse warning symptoms · Recognition of symptoms and coping	· Check list seeking help resource · Finding relapse warning symptoms · sharing experience	· Instruction · VideoⅤ: episode 1 · Small group discussions	· Performance accomplishments
12	· Knowledge about relapse warning symptoms · Recognition of symptoms and coping	· Recording relapse warning symptoms · Coping methods, relapse warning symptoms · Sharing experience	· Instruction · VideoⅤ: episode 2 · Small group discussions · Telephone	· Performance accomplishments · Vicarious experiences · Persuasion

management education. The Wilcoxon rank sum test was also used determine if there were any differences between the experimental group and the control group after the medication and symptom management education. All statistical analyses were performed using SPSS 10.0 for Windows.

RESULTS

Prior to the medication and symptom management education, and measuring the sociodemographic and illness variables of the participants, it was determined that the two groups, 18 in the experimental and 20 in the control, were not statistically different (Table 2).

It also found that the two groups were homogeneous with no significant statistical differences. The following variables such as self-efficacy, medication compliance, supports from family members in taking medication, and number of the relapse warning symptoms in the two groups were similar (Table 3).

Table 2. Comparison of the General Characteristics between the Two Groups

		Experimental (N=18)	Controls (N=20)	*p*
Gender	Male	10	12	0.78
	Female	8	8	
Age (mean ± SD)		32.67 ± 8.13	32.95 ± 8.30	0.92
Marital Status	Unmarried	13	13	0.51
	Married	4	6	
	Divorced	-	1	
	Others	1	-	
Education	Less than middle school	-	1	0.69
	More than middle school	1	1	
	High school	-	1	
	More than high school	9	7	
	College student	3	2	
	Bachelor's Degree or more	5	8	
Occupational status	Unemployed	14	13	0.74
	Student	2	2	
	Employee	1	2	
	Self-management	1	3	
Monthly Income	0.5-1 million	3	4	0.58
	1-1.5 million	2	4	
	1.5-2.0 million	1	2	
	more than 2 million	-	1	
	no income	12	9	
Number of hospitalization (mean ± SD)		2.17 ± 1.24	2.80 ± 1.85	0.23
Age of onset (mean ± SD)		26.67 ± 8.41	26.00 ± 8.23	0.81
Diagnosis	Schizophrenia	10	11	0.57
	Mood disorders	5	6	
	Delusional disorder	3	3	

not significant, t-test, Chi-square test.

Table 3. Comparison of Self-efficacy, Medication Compliance, Family Supports in Medication Compliance and the Relapse Warning Symptoms between the two Groups before the Education Program

	Experimental (N=18)	Control (N=20)	*Z*	*p*
Self-efficacy	18.337 ± 6.173	19.900 ± 5.290	-0.617	0.538
Medication compliance	88.333 ± 18.149	84.500 ± 19.594	-0.539	0.590
Family supports in medication compliance	4.125 ± 1.029	3.975 ± 1.342	-1.147	0.252
Relapse warning symptoms	14.722 ± 9.856	14.700 ± 7.967	-0.150	0.988

not significant, Wilcoxon test.

Table 4. Comparison of Self-efficacy, Medication Compliance, Family Supports in Medication Compliance and the Relapse Warning Symptoms between the two Groups after the Education Program

	Experimental (N=18)	Control (N=20)	*Z*	*p*
Self-efficacy	22.055 ± 2.754	18.000 ± 4.920	-2.467	0.014*
Medication compliance	95.555 ± 7.838	86.500 ± 10.400	-2.803	0.005†
Family supports in medication compliance	4.500 ± 0.804	4.000 ± 1.169	-1.334	0.182
Relapse warning symptoms	11.222 ± 4.453	16.455 ± 3.940	-4.434	0.000†

*$p<0.05$, †$p<0.01$, Wilcoxon test.

After applying the medication and symptom management education, significant differences in self-efficacy, medication compliance, and the number of the relapse warning symptoms were found. However, the two groups showed no significant difference in the case of family support for ensuring that medication was taken (Table 4).

DISCUSSION

Self-efficacy is an expression of the personal response and one's belief in their behavior patterns. It can be measured as a successful assessment tool in psychotherapy and behavioral modification programs.[29] According to this theory, confidence in one's ability can have an influence on the effectiveness of quitting smoking, or abstaining from drinking.[30-32] It can also affect one's attitude towards medication as well as exercise.[20,27,33,34] Therefore, self-efficacy can be defined as the ability to pursue one's responsibilities to oneself despite emotional or other difficulties. Bandura's self-efficacy theory is applicable and may be useful to psychiatric patients. This is because psychiatric disorders, particularly psychotic disorders, are recurrent and chronic. Psychiatric patients also want to play an active role in controlling their disease.[35]

Even though this study showed the positive effect of self-efficacy in managing medication and the symptoms of psychotic patients, there are few studies that have measured the self-efficacy of psychotic patients in Korea. One study compared the self-efficacy of day-hospital patients with out-patients.[36] Another study measured the self-efficacy of psychotic patients after treating them with foreign medication and symptom management programs.[37] However, many studies in the era of internal medicine have reported positive results after giving patients one or two self-efficacy education programs such as a self-care

program, self-help education, watching slides and videos, telephone guidance, persuasion, and emotional arousal. The subjects in these studies were reported to have chronic diseases like diabetes, hypertension, rheumatoid arthritis and leukemia.[38-41]

These positive results of self-efficacy education suggest that patient education does not simply mean delivering knowledge on a particular illness, but helping patients acquire and maintain new information, skills, attitude, even behavioral changes. The results of these studies conclude that patient education should focus on improving patient self-efficacy in order to maximize the effects of treatment. This study also supports that conclusion.

Lack of insight and noncompliance are important reasons for a relapse and evolving symptoms of rehospitalization.[42] Researchers have generally focused on a patient's knowledge regarding medication compliance.[11,15,43,44] Many noncompliant patients who prematurely cease their medication are often unaware of the name, dosage, effects, and side effects of their medication. One study reported that out of 281 participants, 22% of patients were only aware of the name of their prescribed drug, and only 14% knew the name, dosage, and effects of their drugs.[21] Another study reported that 11 patients out of 57 understood the name, dosage, effects, and side effects of their drugs. However, 38 patients had never heard about the side effects of their medication.[14] Liberman reported that only 29% of participants knew the effects of their drugs and other researchers reported similar results.[45,46] The important variable in expectations concerning patient medication compliance is the patient's knowledge of the effects and side effects of their medication.[47] Medication compliance of patients on their own initiative increases remarkably after patients receive medication and symptom management education.[48] In another study, medication compliance increased 15 - 20% in the experimental group and showed a meaningful difference.[15]

In this study, though self-reported interviews, similar results were found in that the experimental group showed increased medication compliance rates than the control group after the education program. The improvement in medication compliance may be related to the education program including the name, dosage, effect, and side effects of drugs.

However, after the education program, no significant differences in terms of family support in medication compliance between the control and the experiment group were found. This may be related to the fact that, particularly in Korea, psychiatric patient care is family-centered. Therefore, the family is highly aware of the need for family members in treatment. Therefore, the burden of family caregivers is severe.[49] Families who intrude into and sacrifice everything for psychiatric patients usually do so because they feel that they may have contributed to the disease.[50]

At any rate, the results of this study confirm that educating the family caregivers about the nature of the disease and its optimal management, including the patient's active role of the disease treatment, should be stressed. Furthermore, it is important to educate psychiatric patients and their family so that they can identify the patient's own ability in self managing their medication.

The mean number of the relapse warning symptoms before the experiment was 14.7 in both groups in this study. The most frequently reported symptoms were sensitiveness, agitation, irritability, confusion, restlessness, preoccupations, insomnia, vivid dreams, difficulties in concentration, forgetfulness, and fearfulness. The measurements after the education program indicated a mean of 11.2 in the experimental group compared to 16.4 in the control group. In the experimental group, sleep problems such as hypersomnia and vivid dreams, cognitive dysfunctions including forgetfulness and difficulties in concentration, and a loss of interest were the most frequently reported problems. However, in the control group, more complex emotional, sleep, perceptual, thought, and cognitive symptoms including sensitiveness, agitation, irritability, preoccupation, insomnia, forgetfulness, indecisiveness, derealization, and sexual obsession were frequently reported.

Previous studies have shown that patients experience depression and anxiety in a nonpsychotic relapse and 66% of patients and their family members reported difficulties in concentration,

tension, restlessness, anorexia, irritability, sleep problems, and social withdrawal.[43] Other studies have shown variable results regarding the number of relapse warning symptoms. Some studies have given no concrete results,[43,48] whereas other studies have reported the average as being 17.4 in 1501 symptoms, or 4.5 in 213 certain symptoms.[51,52] These results, including those from this study, showed that the relapse warning symptoms are similar, but number of the symptoms vary. This may be related to the different measurement tools.

After receiving the education program, patients could better communicate with the medical care team regarding the effects of medication, medication compliance, coping with the side effects, and other matters related to their medical care.[46] The rehospitalization rate after the medication and illness education was lower. In a study, 85 participants were educated about schizophrenia and its medical treatment. After 1 year, 13% of the educated patients relapsed when compared with 29% of the control patients.[53] There is another report showing that knowledge regarding medication increased after providing patients with a nursing guide on the medication effects and dosage.[54] Another study reported that the reasons for noncompliance were a fear of being addicted, insufficient knowledge of the relapse symptoms, a lack of faith in medication, memory impairments, and a lack of information on the treatment program.[55] A cognitive approach based a patient education program was introduced to assist patients in obtaining information regarding their illness and medication, which resulted in reduction in the fear of medication in patients and promoting knowledge on their illness and treatment.

Therefore, from previous research literature, the following conclusions can be drawn: patient education regarding their medication and illness can have a positive influence on medication compliance, symptom management, and the rehospitalization rate. This study also reached the same results i.e. to educate patients on how to care for themselves, and successful methods such as self-efficacy can have a positive impact on relapse rates.

However, there were some limitations in this study. Initially, we compared the effect of the medication and symptom management program immediately after applying the education program. Therefore, its long-term effects could not be confirmed. Second, we could not conclude which specific variables among the self-efficacy resources were effective and/or more effective. Consequently, a further study on the different effects between the variable resources is needed.

An educational program using the self-efficacy resources for the medication and symptom management was developed by this study. This program may provide a good foundation or background for a more specialized cognitive-behavioral therapy program, which should further the causal material of patient education in the future.

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