

The Effects of Medication and Symptom Management Education Program Based on Self Efficacy Theory for the Psychiatric Patients

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Propose. An effective rehabilitation program had been developed for psychiatric patients' self management of medication and symptoms in Korea. 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.

Methods. The developed program utilizes the self efficacy method reported by Bandura, it includes manuals and videotapes focusing on real life situations, small group discussions, and telephone coaching. This study investigated the effects of this program with respect to various predictable variables in psychiatric rehabilitation. Thirty eight patients were selected for this study, 18 in the experimental program and 20 as controls.

Results. The results showed that the subjects who attended this educational program reported significantly more improvement in attitude toward medication compliance ($p=0.033$), and significantly less relapse warning symptom scores ($p=0.000$) than the controls.

Conclusion. This program may be a useful psychoeducational resource for professionals in the field of clinical practice in psychiatry.

Key Words: Psychiatric rehabilitation, Medication and symptom management education

INTRODUCTION

Many researchers have attempted to develop relapse prevention programs that include schedules of psychoeducation for psychiatric disorders and their treatment strategies as a means of helping patients manage their illness themselves (Larkin, 1982; Beck & Staffin, 1986; Eckman, Liberman, Phipps, Karen & Blair, 1990; Liberman & Foy, 1983; Liberman, DeRise & Muser, 1989; Liberman & Corrigan, 1993). 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 their own disease.

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 (Kim & Byun, 1995).

There are some problems in applying modified pro-

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grams, such as the Liberman model. Firstly, the manual is not specific, making the care giving psychiatrists and nurses uncertain about 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 (Creed, Anthony, Godbert & Huxley, 1989). Another report also pointed out 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 (Geller, 1982). 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 (Kelly & Scott, 1990). 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 to 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 for (Bandura, Adams, Hards & Howell, 1980; Bandura, 1997; Clark, Abrams & Miaura, 1991; Gortner, et al, 1988). It can thus be used as a forecasting tool to predict behavior. Self-efficacy is also a psychosocial factor in learning theory (Dick, Cameron, Cohen & Barlow, 1985). It can be applied to managing psychiatric patients.

An education program for medication compliance and symptom management had been developed by Korean researchers through a multidisciplinary approach based on Bandura's self-efficacy theory (Shon & Park, 2002). The goal in this study was to test the effectiveness of this program in terms of relapse warning symptoms and attitudes toward medication compliance. This study also aims

to present the program as another useful psychoeducation program for rehabilitating psychiatric patients in Korea.

METHODS

Design

An investigation was conducted to determine the effect of the developed medication and symptom management program on the psychiatric patients' attitude toward medication compliance and relapse warning symptoms.

Testing was conducted using a nonequivalent control group pre-post test design.

Subject

The research team utilized a convenient sampling method for the recruitment of subjects. The subjects had been diagnosed and treated by psychiatrists for schizophrenia, mood disorders and delusional disorders according to DSM-IV. They had been hospitalized in a psychiatric hospital in Busan and subsequently discharged. Among the 53 outpatients, 40 patients who understood the purpose of the study willingly participated. Twenty were classified in the experimental group, and 20 were placed in the control group. During this process, one patient got a job and another one moved out. Therefore 2 patients in the experimental group were excluded, leaving a final total of 18 in that group.

Data collection

From April 6 to June 22, 2003, the developed educational program was provided every Friday for 70 minutes, for a total of twelve times (Table 1). The first six lessons were about the recognition of symptoms and various coping methods. The following three lessons were about reinforcing knowledge concerning medicine, medication use and coping with side effects. The last three lessons concerned relapse warning symptoms, coping methods, knowledge about stress and coping strategies.

The program was designed to be as specific and as practical as possible in order to offer the most benefit to the patients. To manage relapse, patients should have specific coping strategies and confidence in managing him/herself with a high degree of self-efficacy. This is developed from past personal accomplishments, vicarious experiences, emotional arousal, and verbal persuasion.

Table 1. Construction of the Program

time	Objective	curriculum	method	self-efficacy information
1	<ul style="list-style-type: none"> • friendship • introduction of program • providing information about psychiatric disorders 	<ul style="list-style-type: none"> • self-introduction • orientation • causes of mental disorder • explanation of program group rule • sharing experience 	<ul style="list-style-type: none"> • instruction • small group discussion 	<ul style="list-style-type: none"> • performance accomplishment
2	<ul style="list-style-type: none"> • providing symptom information about hallucination, delusion and coping method 	<ul style="list-style-type: none"> • a brief review of previously learned material • hallucination, delusion and coping method • sharing experience 	<ul style="list-style-type: none"> • instruction • small group discussion 	<ul style="list-style-type: none"> • performance accomplishment
3	<ul style="list-style-type: none"> • providing symptom Information about negative symptom and coping method 	<ul style="list-style-type: none"> • a brief review of previously learned material • negative symptom and coping method • sharing experience 	<ul style="list-style-type: none"> • instruction • small group discussion 	<ul style="list-style-type: none"> • performance accomplishment
4	<ul style="list-style-type: none"> • information about continuing symptom and coping method 	<ul style="list-style-type: none"> • a brief review of previously learned material • residual symptom and coping method • finding residual symptom • sharing experience 	<ul style="list-style-type: none"> • instruction video IV : episode 1, 2 • small group discussion • telephone 	<ul style="list-style-type: none"> • performance accomplishment • vicarious accomplishment • persuasion
5	<ul style="list-style-type: none"> • developing skills to recognize symptoms 	<ul style="list-style-type: none"> • concept and importance of disease recognition • report on a case history • effective method of prevent relapse • sharing experience 	<ul style="list-style-type: none"> • instruction video III : episode 1 • small group discussion 	<ul style="list-style-type: none"> • performance accomplishment • vicarious accomplishment
6	<ul style="list-style-type: none"> • information about effect of medication, inspiration of medication 	<ul style="list-style-type: none"> • importance of maintance antipsychotic medication • sharing experience 	<ul style="list-style-type: none"> • instruction video II : episode 1 episode 2 • small group discussion 	<ul style="list-style-type: none"> • performance accomplishment • vicarious accomplishment
7	<ul style="list-style-type: none"> • side effect of medication and coping method 	<ul style="list-style-type: none"> • causes and types of side effects • coping method • finding side effects • sharing experience 	<ul style="list-style-type: none"> • instruction • video I : episode 1 episode 2 episode 3 • small group discussion 	<ul style="list-style-type: none"> • performance accomplishment • vicarious accomplishment
8	<ul style="list-style-type: none"> • knowledge about medication and medication compliance strategy 	<ul style="list-style-type: none"> • proper medication use • discuss the difficult situation to take medication • sharing experience 	<ul style="list-style-type: none"> • instruction • video I : episode 2 • small group discussion • telephone 	<ul style="list-style-type: none"> • performance accomplishment • vicarious accomplishment • persuasion
9	<ul style="list-style-type: none"> • information about disorders cycle and relapse prevention strategy 	<ul style="list-style-type: none"> • a brief review of previously learned material • concept and causes of relapse • importance of relapse prevention • sharing experience 	<ul style="list-style-type: none"> • instruction • small group discussion 	<ul style="list-style-type: none"> • performance accomplishment
10	<ul style="list-style-type: none"> • knowledge about stress and coping method 	<ul style="list-style-type: none"> • exercise therapy • stress and coping method • muscle relaxation 	<ul style="list-style-type: none"> • instruction • small group • discussion practice 	<ul style="list-style-type: none"> • performance accomplishment • emotional arousal
11	<ul style="list-style-type: none"> • knowledge about relapse warning symptoms 	<ul style="list-style-type: none"> • cognition of symptom and coping • check list seek for helping resource • finding relapse warning symptoms • sharing experience 	<ul style="list-style-type: none"> • instruction • video V : episode 1 • small group discussion 	<ul style="list-style-type: none"> • performance accomplishment
12	<ul style="list-style-type: none"> • knowledge about relapse warning symptoms • cognition of symptom and coping 	<ul style="list-style-type: none"> • recording relapse warning symptoms • coping method relapse warning symptoms • sharing experience 	<ul style="list-style-type: none"> • instruction • video V : episode 2 • small group discussion • telephone 	<ul style="list-style-type: none"> • performance accomplishment • vicarious accomplishment • persuasion

As teaching methods, self efficacy information resources such as instructional videos for vicarious experiences, small group discussions for personal accomplishments, telephone coaching for persuasion were adopted. Instructional videos had been developed by our research team, which were fictional dramas consisting of successful and unsuccessful situations in medication compliance and symptom management. In addition, stress management techniques were provided so that the patients could comply with pharmacotherapy and alleviating hyperarousal.

Data were retrieved by giving out the questionnaires to the experimental and control groups before and after the education program.

Instruments

1) Attitude toward medication compliance

Attitude toward medication compliance was measured by The drug attitude inventory self administered questionnaire (Hogan & Awad, 1992), a 5 Likert scale instru-

ment, in which the higher score is the higher level of positive attitudes. In this study, it's Cronbach's α was .86.

2) Relapse warning symptom

The relapse symptom measurement, self administered questionnaire (Cronbach's alpha 0.85) was used, which was originally developed at UCLA by Liberman, DeRise & Muser (1989) with 42 questions, translated into Korean, regarding subjective symptoms (Kim & Byun, 1995). The higher score refers to the higher level of symptom.

Data analysis

All statistical analysis was performed using SPSSwin (Version 10.0). The χ^2 test and t test analysis were used to identify the general characteristics and homogeneity of the experimental and control groups. In the next step, Wilcoxon rank sum test was applied to identify the homogeneity of the two groups before the medication and symptom management education. We also tested to see

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

		experimental group (n = 18)	Control group (n = 20)	P
Gender	Male	10	11	.68
	female	8	9	
Age(Mean)		31.55	32.75	.82
Marital Status	Unmarried	12	13	.51
	married	5	6	
	divorced	-	1	
	the rest	1	-	
Education	Less than Middle School	-	1	.64
	More than Middle School	1	2	
	High School	-	1	
	More than high school	8	6	
	College Student	4	3	
	Bachelor's Degree or more	5	7	
Vocational Status	Unemployed	13	13	.74
	Student	2	2	
	Employee	1	2	
	self-management	2	3	
Monthly Income	0.5-1 million	3	3	.67
	1-1.5 million	4	5	
	1.5-2.0 million	1	2	
	more than 2 million	-	1	
	no income	10	9	
Frequency of Hospitalization (Mean)		2.37	2.75	.33
Age of onset(Mean)		26.64	26.12	.71
Diagnosis	Schizophrenia	10	11	.57
	mood disorder	5	6	
	Delusional disorder	3	3	

if there were any differences between the experimental group and the control group after the medication and symptom management education using the Wilcoxon rank sum test.

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 attitude toward medication compliance and number of the relapse warning symptoms in the two groups were similar (Table 3).

After applying the medication and symptom management education, significant differences in attitude toward medication compliance and the number of the relapse warning symptoms were found (Table 4, 5).

DISCUSSION

Lack of insight and noncompliance are important reasons for a relapse and developing symptoms that may lead to rehospitalization (Eckman, Wirshing, Marder, Liberman & Cronk, 1992). The important variable in expectations concerning patient medication compliance

was considered the patient’s knowledge of the effects and side effects of their medication (Kwon, Shin, Cheong & Park, 1997). So, researchers have generally focused on a patient’s knowledge regarding medication compliance (Schwartz, 1998; Eckman, Liberman, Phipps, Karen & Blair, 1990; Herz, 1992; Weiden & Olfson, 1995).

Liberman (1986) reported that the medication compliance of patients on their own initiative increased remarkably after patients received medication and symptom management education. Eckman et al.(1990) also reported that medication compliance increased 15-20% in the experimental group and showed a meaningful difference. But, in contrast, Harmon, Sheri & Tratnack (1992) reported that there was no change in perception and therapy recognition regarding illness after an 8 day education program focused on psychiatric patients. Kuipers and colleagues (1994) indicated that medication and symptom education programs did not influence the attitude and knowledge of medication. Concerning these incoherent results for existing studies, Kuipers et al. (1994) showed that most medication education programs increased the knowledge towards medication, whereas this knowledge did not always influence medication compliance. They emphasized that the positive change of attitude and belief regarding the action of taking medication was the major factor in increasing compliant behavior.

Self efficacy is an expression of the personal response

Table 3. Comparison of Attitude Toward Medication Compliance and Relapse Warning Symptoms Between Two Groups Before Education Program

	Group	Mean	SD	Z	p
attitude toward medication compliance	E	23.41	5.82	-0.95	.19
	C	25.45	6.70		
relapse warning symptom	E	14.34	9.65	-0.16	.97
	C	14.92	7.84		

Table 4. Comparison of Attitude Toward Medication Compliance Between Two Groups After Education Program

Group	Before Education Mean(SD)	After Education Mean(SD)	Z	p
E	23.41 (5.82)	35.11 (4.18)	2.45	.03
C	25.45 (6.70)	28.45 (6.57)		

Table 5. Comparison of Relapse Warning Symptoms Between Two Groups After Education Program

Group	Before Education Mean(SD)	After Education Mean(SD)	Z	p
E	14.34 (9.65)	11.02(4.33)	-4.33	.00
C	14.92 (7.84)	16.56(4.34)		

and one's belief in their behavior patterns. It can be measured as a successful assessment tool in psychotherapy and behavioral modification programs (Schwarzer, 1992). According to this theory, confidence in one's ability can have an influence on the effectiveness of quitting smoking, or abstaining from drinking (Buescher et al., 1991; Delamater et al., 1990; Lawrence & McLeroy, 1986). It can also affect one's attitude towards medication as well as exercise (Creed et al., 1989).

In this study, it is demonstrated that the positive effects of attitude toward medication compliance in psychotic patients after an education program utilized the self-efficacy methods, including the use of VCR tapes and manuals, small group discussions and coaching could help improve the ability of patient to pursue responsibilities to oneself despite emotional or other difficulties.

Therefore, this study concluded that the confidence in his or her ability to apply medication compliance after an education program influenced the attitude of taking medicine and it could show positive change. Diamond (1993) indicated that health behavior is the combination of knowledge, skill, and attitude regarding health.

Harmon et al. (1992) emphasized the importance of a patient's attitude and of the nurse who is responsible for facilitating the patient's attitude towards medication compliance. Other researchers reported that the perceptions of illness was an important factor to decide the attitude towards medication of patients, and this was a bigger influence than knowledge about medication compliance (Fowler, 1992; Foulks, Persons & Merkel, 1996). Larkin (1982) emphasized that nurses are capable of showing the right direction in adopting a positive attitude in patients towards medication compliance.

Because there are few studies that have measured the attitude towards medication compliance of psychotic patients after education, this research finding can not be compared with previous result, it suggests that educational resources should focus on improving patient self efficacy in order to help patients acquire and maintain skills such as using available coping methods in specific treatment situations and even attitude changes towards confidence in managing him/herself in their behavior patterns.

Early recognition of relapse warning symptoms is crucial for both the preventative stage and also in the several stages of treatment. The ability of patients to recognize the symptoms of relapse permits them to accept the prescribed antipsychotic medication and also to ask for

help in dealing with stress (Razali & Yahya, 1995). The mean score of the relapse warning symptoms before the experiment was about 14 for both groups in this study. The measurements after the education program indicated a mean of 11.0 in the experimental group compared to 16.5 in the control group. In the experimental group, sleep problems such as hypersomnia and vivid dreams, cognitive dysfunctions including forgetfulness and difficulties in concentration were the most frequently reported problems. However, in the control group, more complex emotional, sleep, perceptual, thought, and cognitive symptoms including hypersensitiveness, agitation, irritability, preoccupation, 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 (Herz, 1992). Other studies have shown variable results regarding the number of relapse warning symptoms. Some studies have given no concrete results (Herz, 1992; Breier & Strauss, 1983), whereas other studies have reported the average being 17.4 in 1501 symptoms, or 4.5 in 213 certain symptoms (Cohen & Berk, 1985; Heinrichs & Carpenter, 1985). These results, including those from this study, showed that the relapse warning symptoms are similar, but the number of symptoms vary. This may be related to the different measurement tools.

However, in spite of a little differences in both education program and measuring variables, this study and the previous research findings supported that 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 after receiving the education program (Linden & Bocker, 1991). In one 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 (Razali & Yahya, 1995). There is another report showing that knowledge regarding medication increased after providing patients with a nursing guide on the medication effects and dosage (Clary, Denver & Schweizer, 1992). The understanding of the cause, course, treatment and prognosis of the disorders suffered by the patients themselves is strongly related to the promoting treatment compliance and preventing an expected re-

lapse.

This study introduced a cognitive approach based patient education program to assist patients in obtaining information regarding their illness and medication. It resulted in the positive change of attitude and belief about medication in patients and promoting knowledge about their illness and treatment.

Therefore, 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 can have a positive impact on relapse rates.

Limitations of the study

This study utilized a convenient sample by recruiting subjects from only one city in Korea. The generalization of the findings to other populations is therefore limited. Additionally, during the research process, antipsychotic and anticholinergic drugs which might affect cognitive functioning in patients could not be controlled in the experimental nor the control group. This factor could influence the results.

CONCLUSIONS

This research used a quasi-experimental design with nonequivalent control group pre-post test that provided medication and symptom management education program. A total of 38 psychiatric patients; 18 in the experimental program and 20 as controls was compared for attitude toward medication compliance and relapse warning symptoms before and after the education, confirming the effectiveness of the medication and symptom management education

The results showed that the subjects who attended this educational program reported significantly more improvement in attitude toward medication compliance ($p=.033$), and significantly less relapse warning symptom scores ($p=.000$) than the controls.

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. Consequently, a further study on the long term and different effects between the psychoeducational resource variable is needed.

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