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Effect of symptom self-management program on psychotic relapse for patients with chronic schizophrenia

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Introduction : *Relapse is common in schizophrenia. Therefore, schizophrenia patients are vulnerable groups which require special attention. The relapse can cause patients' distress and result in re-admission in psychiatric hospitals. A symptom self-management program (SSMP) has been developed to improve the patients' self-management ability to decrease early symptoms of psychotic relapse.*

Objective : *To evaluate the effect of SSMP on psychotic relapse in patients with chronic schizophrenia.*

Setting : *An out-patient clinic of a psychiatric hospital.*

Research design : *Randomized control trial.*

Patients : *There were eligible 80 patients with chronic schizophrenia who participated in this study.*

Methods : *The samples were randomized by a computerized program, 40 of them were in the experimental group that received SSMP together with routine care, while the other 40 were in the control group that received only routine care. The experimental group underwent 4 phases which were: 1) problem assessment and needs identification; 2) preparation for symptom self-management; 3) practice for symptom*

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self-management; and, 4) evaluation for symptom self-management. The psychotic relapse was indicted by the elevation on remitted psychotic symptom in hallucination, delusion, or disorganized thinking, up to 6 scores measured by the Brief Psychiatric Rating Scale (BPRS).

Results : *The findings revealed that the patients with chronic schizophrenia in the experimental group 1 month after receiving the program was significantly lower than that of the control group at the level .05. The psychotic relapse rate of the control group was 69.2% (9 cases) as compared to 30.8% (4 cases) in the experimental group. In addition, the difference between the proportion of patients with chronic schizophrenia in the experimental group after receiving the program had lower frequency of psychotic relapse than the control group (Kolmogorov Smirnov Z = 4.52, p-value = 0.05).*

Conclusion : *Psychotic relapse was significantly lower in the experimental group.*

Keywords : *Psychotic relapse, symptom self-management, schizophrenic patient.*

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บทนำ : *ปัญหาการกำเริบของโรคในผู้ป่วยจิตเภทเป็นปัญหาที่สำคัญ และพบได้บ่อย การกำเริบของโรคเป็นผลให้ผู้ป่วยต้องประสบกับความทุกข์ทั้งทางร่างกายและจิตใจ และต้องกลับเข้ารับการรักษาตัวในโรงพยาบาลอีก ผู้ป่วยเหล่านี้ขาดความสามารถในการดูแลตนเองในการจัดการกับอาการทางจิต เมื่อเริ่มมีการเปลี่ยนแปลงก่อนที่จะเกิดการกำเริบของโรค ดังนั้นผู้วิจัยจึงได้นำความรู้นี้ไปพัฒนาโปรแกรมการจัดการกับอาการทางจิตด้วยตนเอง เพื่อป้องกันการกำเริบของอาการทางจิตสำหรับผู้ป่วยจิตเภทขึ้น*

วัตถุประสงค์ : *เพื่อประเมินผลของโปรแกรมการจัดการกับอาการด้วยตนเองในการป้องกันการกำเริบของอาการทางจิตในกลุ่มผู้ป่วยจิตเภทที่มารับบริการที่แผนกผู้ป่วยนอก โดยเปรียบเทียบอาการทางจิตและการกำเริบของอาการในผู้ป่วยที่ได้เข้าร่วมโปรแกรมการจัดการกับอาการด้วยตนเองและการพยาบาลตามปกติ เทียบกับผู้ป่วยที่ได้รับการพยาบาลตามปกติอย่างเดียว*

สถานที่ที่ทำการศึกษา : *แผนกผู้ป่วยนอก โรงพยาบาลจิตเวช*

รูปแบบการวิจัย : *การศึกษาเชิงทดลอง*

ผู้ป่วยที่ได้ทำการศึกษา : *ผู้ป่วยโรคจิตเภทที่เข้ารับการตรวจรักษาที่แผนกผู้ป่วยนอก จำนวนทั้งหมด 80 ราย*

วิธีการศึกษา : *แบ่งผู้ป่วยเข้ากลุ่มทดลองและกลุ่มควบคุมโดยใช้วิธีการสุ่มด้วยโปรแกรมคอมพิวเตอร์ การเก็บรวบรวมข้อมูลคือ กลุ่มทดลองได้เข้าร่วมโปรแกรมการจัดการกับอาการทางจิตด้วยตนเอง ซึ่งต้องผ่านกระบวนการทั้ง 4 ขั้นตอน ประกอบด้วย 1. การประเมินความต้องการและการวางแผน 2. การเตรียมความพร้อมเพื่อการจัดการกับอาการด้วยตนเอง 3. การปฏิบัติการจัดการกับอาการด้วยตนเอง และ 4. การติดตามและประเมินผลการปฏิบัติ และการพยาบาลตามปกติ ส่วนในกลุ่มควบคุมจะได้รับการพยาบาลตามปกติเพียงอย่างเดียวเป็นระยะเวลา 6 สัปดาห์ เครื่องมือที่ใช้ ในการเก็บข้อมูล ได้แก่ แบบประเมิน*

อาการทางจิตฉบับย่อ โดยใช้คะแนนอาการทางบวกเป็นเกณฑ์ในการประเมินอาการกำเริบของโรค การเก็บข้อมูลครั้งแรกจะประเมินในวันที่กลุ่มตัวอย่างทั้งสองกลุ่มได้ตกลงยินยอมเข้าร่วมในโปรแกรม เป็นคะแนนพื้นฐานสำหรับเปรียบเทียบกับข้อมูลครั้งที่สองกลุ่มทดลองจะประเมินอาการทางจิตอีกครั้งหลังจากสิ้นสุดโปรแกรม ไปแล้ว 1 เดือน ส่วนกลุ่มควบคุมจะประเมินคะแนนอาการทางจิตห่างจากครั้งแรก 10 สัปดาห์

ผลการศึกษา : *ผลการศึกษาพบว่ากลุ่มที่ได้เข้าร่วมโปรแกรมการจัดการกับอาการด้วยตนเองต่อการกำเริบของอาการทางจิตในผู้ที่ป่วยเป็นโรคจิตเภทมีค่าเฉลี่ยของคะแนนอาการทางจิตน้อยกว่ากลุ่มควบคุมอย่างมีนัยสำคัญทางสถิติที่ระดับ .05 และพบว่าสัดส่วนของการกำเริบของอาการทางจิตของกลุ่มควบคุมมีความแตกต่างจากกลุ่มทดลองอย่างมีนัยสำคัญทางสถิติที่ระดับ.05*

วิจารณ์และสรุป : *ผลการศึกษาครั้งนี้ แสดงถึงประสิทธิภาพของโปรแกรมการจัดการกับอาการด้วยตนเองในการป้องกันการกำเริบของอาการทางจิตในผู้ที่ป่วยเป็นโรคจิตเภท ผลการศึกษาบ่งชี้ว่าสามารถนำโปรแกรมนี้ไปใช้ในปฏิบัติการพยาบาลจิตเวชในชุมชน*

คำสำคัญ : *การกำเริบของอาการทางจิต, การจัดการกับอาการ, ผู้ป่วยจิตเภท.*

Schizophrenia is a severe psychotic disorder. It is one of the major mental health problems in Thailand. Patients with chronic schizophrenia have experienced severe and persistent symptoms that is associated with impairment in daily functions.[1] Symptoms of schizophrenia are concurrent presentations of positive psychotic symptoms (e.g., hallucinations, delusions); negative symptoms (e.g., anhedonia, asociality); and affective symptoms (primarily depressive).[2] The occurrence of psychotic relapse is a characteristic of schizophrenia.[3] Patients with chronic schizophrenia are highly vulnerable to relapses[4,5] because the illness limits their ability to cope and prevent them from learning to take care of themselves regarding from experienced with severe and persistent symptoms.[1] The incidence of relapse in patients with schizophrenia who have experienced one or more psychotic episode is high and ranged between 50%, and 80% in the following year had an episode of psychosis without treatment.[6] Relapses can cause significant personal distress, interfere with rehabilitation efforts, and result in psychiatric hospitalization.[7] Early psychotic symptom occurs in the phase preceding a psychotic relapse is prodromal symptom or early warning signs.[8 - 11] Previous studies on schizophrenic symptoms have found that most patients had early symptom within 2 - 4 weeks before relapse.[8 - 11]

Patients with chronic schizophrenia are in the residual phase of illness which have the psychotic symptoms similar to prodromal phase which the symptoms gradually progress and patients need to receive help before the symptom become severe.[12] Early psychotic symptoms can be defined as the subjective experiences, thought and behaviors of the patients that occur in the phase preceding a psychotic relapse.[10,13] The signs most commonly described include anxiety/irritability, depression/withdrawal, disinhibition, and psychotic symptoms.[14] The active symptom management is important in decrease early psychotic symptoms in order to prevent symptom relapse.[15,16]

The study of prevention of relapse in schizophrenia proposed long-term family psychoeducation approaches have demonstrated effectiveness for lowering the relapse rate over 1 to 2 years by reducing expressed emotion, enhancing medication compliance, and improving social functioning.[17 - 20] But there were still conflicting results from this approach. Effects achieved for psychoeducation directed solely at patients are also effective, but remain unclear.[21,22] In addition, psychoeducation has no effect on symptoms, functioning, and medication adherence.[22-25] Moreover, the psychoeducation do not require to accompany patients after the group has terminated and supported them in integrating the knowledge into their daily life (e.g. monitoring medication, stress, and early signs of relapse).[26]

Studies in Thailand and Western countries have shown that some individuals with schizophrenia could identify signs of impending relapse and develop coping strategies to manage their symptoms[5,27] but little is known about how they acquire this self-management knowledge.[28] Studies using symptom management programs have become increasingly relevant for relapse prevention.[29] Early intervention, including close monitoring for prodromal symptoms and psychosocial interventions, together with

antipsychotic medications, could be most effective for preventing relapse.[30 - 33] Management rather than cure is the therapeutic issue and important treatment goal is to limit the reappearance of psychotic symptoms by early intervention at the decompensation process.[28] Literatures were reportive to significantly symptom management reduced symptom and prevented complication of the illness.[5, 27] Therefore, developing of effective nursing care to improve the ability of the patients with chronic schizophrenia is needed. The purpose of this study is to evaluate the effective of a symptom self-management program (SSMP) together with a routine care on psychotic relapse in schizophrenic patients compared with receiving a routine care only.

This study was using knowledge from the vulnerability-stress model to understand the predicting factors to relapse and the self-management model to manage with these factors. Symptom self-management is the strategies that patients apply to control and decrease early psychotic symptoms by using appropriate methods with existing resources[34] by actively involved in their own care, minimize stress on their living and foster are adaptation to life in the community, and continue antipsychotic medication to reduce and control psychotic symptoms and prevent psychotic symptoms.[7, 35, 36] The symptom self-management program (SSMP) was derived from the concept of self-management [34] included self-monitoring, self-evaluation, and self-reinforcement. This program is composed of four phases: 1) problem assessment and needs identification; 2) preparation for symptom self-management; 3) practice for symptom self-management; and, 4) evaluation for symptom self-management. The conceptual framework of the SSMP is summarized in Figure 1.

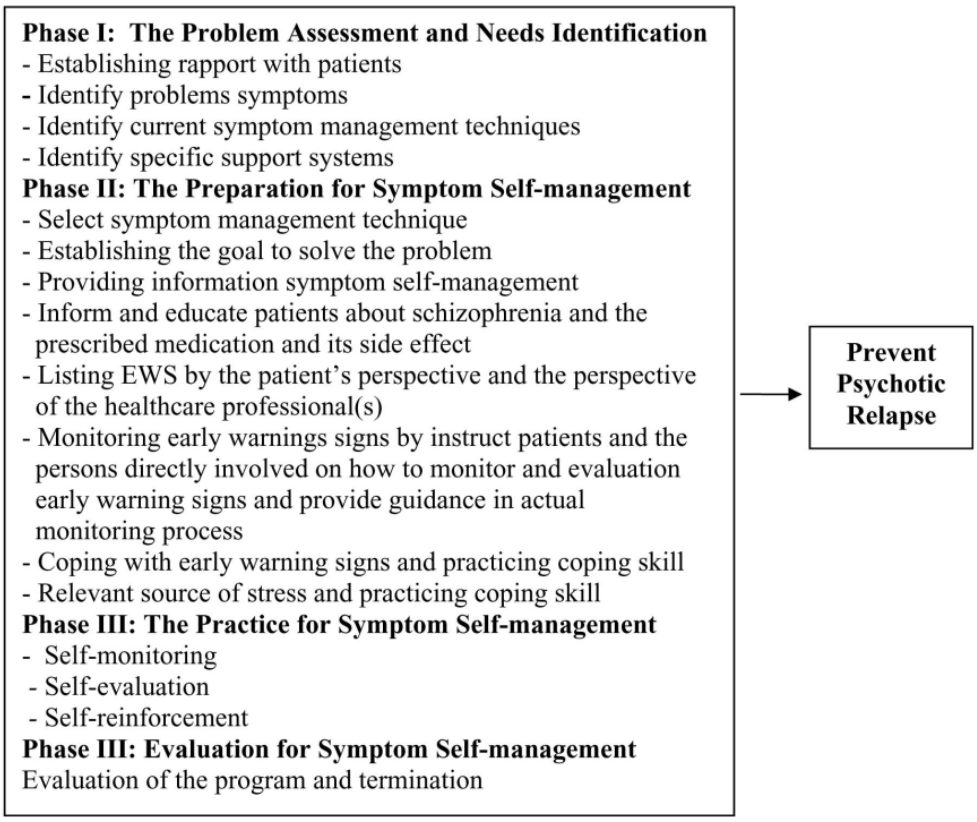

Figure 1. Conceptual framework of the SSMP.

Methods

After the study was ethical approved by the administration of Galya Rajanagarindra Institute. Participants were recruited from an outpatient ward of a psychiatric hospital. They were 80 eligible schizophrenic patients. The experimental group received SSMP together with routine care, while the control group received only routine care. The criteria used to select the participants included Thai male or female adults aged between 20 to 60 with chronic schizophrenia who have history of two acute episodes in the past five years, outpatients complying with medical treatment, no history of drug and alcohol dependence, no diagnosis of brain dysfunction or cognitive impairments, ability to read and write Thai and all participants had to agree to participate in the investigation, as expressed in their consent form. Criteria for exclusion from the study included: Brief Psychotic Rating Scale's score in more than 30; absence from at least one session; receiving electro convulsion therapy;. When the schizophrenic patients whose characteristics met the inclusion criteria were selected for the study, the participants were randomized into either experimental or control group by computerized random sampling number. Their numbers drew them into the group.

This study was a randomized control-group pretest-posttest designed by simple random sampling technique using computer program. Ninety-eight patients with chronic schizophrenia screened from the patients' record files in outpatient ward; 10 of them were excluded, since 8 had drug or alcohol dependence, and two refused to participate. As for the initial data collection, 88 participants fulfilled the initial criteria and were approached to participate in the study. However, 8 patients were unable to participate throughout the whole process of the study. Four the participants in experimental group dropped out; two failed to maintain the follow up after finishing the intervention and two could not complete the session. Also, in the control group four cases dropped out; two refused to participate in the study, and two were lost to follow up. Therefore, the total number of participants who completed the program in each groups were 40 cases. Forty of them were in the experimental group who received SSMP together with their routine care, whereas the other 40 were in the control group who received only their routine care. The detail of sampling procedures is presented in Figure 2.

The symptom self-management program hereby means the promotion of the schizophrenic patients' symptom self-management program that was holistic and continued nursing intervention. This program is dynamic and changeable process with interaction between the nurse and the patient. This program is composed of four phases, which were, namely: 1) problem assessment and needs identification; 2) preparation for symptom management; 3) practice for symptom management; and, 4) evaluation of symptom management. This program is composed of 6 sessions for continuing 6 weeks. The time of each session were session 1 for 60 minutes, session 2 and 3 for 90 minute, session 4, 5 and 6 depending on patients' needs. The setting, session 1, 2, 3 and 6 were implemented at the activity room in psychiatric hospital, but session 4 and 5 were implemented at their homes, The time of follow up in both groups were at 10^{th} week after recruitment to the study. The detail of the program is provided in Table 1.

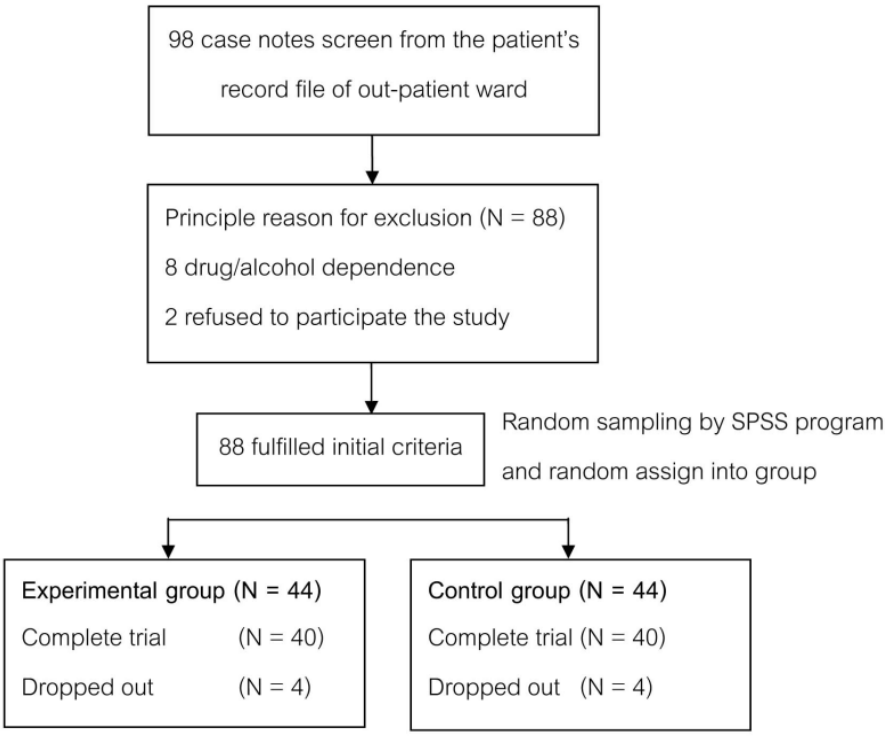

Figure 2. Details of sampling procedure.

Table 1. Summarization of the intervention process.

Phase	Contents	Method	Session & Time
Problem Assessment & Need Identification	- Trust building - Introduction to the program - Mutual goal setting - Participation in process	- Group process	- Session 1 - 60 minute
Preparation for Symptom Self-management	- Schizophrenia & Psychotic relapse knowledge - Early warning signs management skill training - Information about the resources that effect the management	- Group process - Group teaching - Group training	- Session 2 - 90 minute - Session 3 - 90 minute
Practice for & Symptom Self-management	- Self-monitoring - Self-evaluation - Self-reinforcement	- Daily self- monitoring form - Telephone follow up - Individual counseling	- Session 4 - Session 5
Evaluation for Symptom Self-management	- Process evaluation - Outcome evaluation	- Daily self-monitoring form - Participate with the researcher	- Session 6

*session 4, 5 and 6 duration of time was depending on participations' need.

Psychotic relapse refers to the elevation on remitted psychotic symptom on one of the symptom in hallucination, delusion, or disorganized thinking, up to 6 scores as measured by the Brief Psychiatric Rating Scale (BPRS). [37] The BPRS consists of three subscales which cover 18 common psychiatric symptoms as follows: 1) positive psychotic symptoms has nine items including somatic concern, conceptual disorganization, grandiosity, hostility, suspiciousness, hallucination behavior, unusual thought content, excitement and disorientation; 2) negative psychotic symptoms has five items including emotional withdrawal, mannerism and posturing, motor retardation, uncooperativeness, and blunted affect; and, 3) affective symptoms has four items including anxiety, guilt feelings, tension, inappropriate affect and depressive mood. The 18 items are rated on a 7-point, item-specific Likert scale from 1-7 ("1" not present to "7" extremely severe), with the score ranging from 18 - 126. The high scores indicate more severe symptoms. Rating on the BPRS scale is based upon observation of the patients and verbal report by the patient. As for the administration time, clinical interview -18 min, BPRS ratings - 2 to 3 minutes if clinician is familiar with BPRS. This study used the relapse criteria of the elevation on a remitted psychotic symptom for hallucinations, delusions, and disorganized thinking up to 6 scores on BPRS for a 1 month period can determine psychotic relapse.[37] To validate the instrument using in this study, the content was validated by five experts; one psychiatrist, two psychiatric nurse instructors, and two psychiatric nurses. The inter-rater reliability between the researcher and research assistant was 89. The research assistant who was a volunteer clinical psychiatric nurse with master degree in psychiatric nursing and is an advance practice nurse would use BPRS for data collecting. In addition, the research assistant was trained to use this instrument under the supervision of a physician who was an expert in this field. Data were collected twice: on the recruitment day, and about 10 weeks after the recruitment. The obtained data were analyzed with descriptive statistics.

Results

The demographic characteristics of the samples in the experimental and control groups are shown in Table 2. Chi-square test reveals no statistically significant difference between the control and experimental groups regarding gender, marital status, education, occupation. However, there was statistically significant difference between the age group of the control and experimental groups (p-value =.03). To test the statistical difference of the age and psychotic symptom in experimental group and control group, two-way ANOVA was used. It was found that there was no interaction effects between age group and the experimental and control groups (p =.51). In addition, age had no interaction effects on the psychotic symptoms (p =.64).

Number of receiving treatment characteristic, the total participants' number of receiving treatment ranged from 2 to 5 times ($\bar{x}$ = 2.45; SD=0.73). In the control group, the number of subject who received the treatment ranged from 2-5 times ($\bar{x}$ = 2.40, SD = 0.67). As for the experimental group, the number of received treatment ranged from 2-5 times ($\bar{x}$ = 2.50, SD = 0.78). Duration of having schizophrenia in the total participants ranged

from 1-5 years (x = 3.23, SD = 1.54) similar to the experimental group, the duration of having schizophrenia ranged from 1-5 years (x = 3.36, SD = 1.56) (Table3).

Table 2. Demographic characteristic of the samples.

Characteristics	Control		Experimental		X^2(df)	p-value
	N	%	N	%		
Gender						
Female	13	32.5	7	17.5	2.40 (1)	0.12
Male	27	67.5	33	82.5		
Total	40	100	40	100		
Age						
20 – 29 years	5	12.5	14	35	9.16 (3)	0.03*
30 – 39 years	16	40	18	45		
40 – 49 years	12	30	6	15		
50- 59 years	7	17.5	2	5		
Marital Status						
Single	22	55	25	62.5	0.46 (2)	0.79
Married	11	27.5	9	22.5		
Widow/divorce/separate	7	17.5	6	15		
Total	40	100	40	100		
Occupation						
Office Staff	11	27.5	9	22.5	1.86 (2)	0.39
Labor for hire and-Farmer	14	35	10	25		
Student and Unemployment	15	37.5	21	52.5		
Total	40	100	40	100		
Education						
Elementary	13	32.5	13	32.5	2.06 (3)	0.56
Secondary	5	12.5	4	10		
High school	13	32.5	18	45		
Diploma/Bachelor	9	22.5	5	12.5		
Total	40	100	40	100		

*$p < 0.05$

Table 3. Demographic characteristic of control group and experimental group: Number of receiving treatment and Duration of having illness.

Characteristics	Control		Experimental		t-test	df	p-value
	Mean	SD.	Mean	SD.			
Number of receiving treatment	2.40	0.67	2.50	0.78	0.61	78	0.54
Duration of having schizophrenia	3.10	1.53	3.36	1.56	0.78	78	0.44

p >.05

The comparison of psychotic symptoms revealed the mean total scores of pretest in positive symptom, negative symptom, affective symptom, and total scores were 11.63 (SD.=2.18), 7.89 (SD.= 2.30), 7.46 (SD.= 2), and 26.98 (SD. = 3.49), respectively. The mean total score of post test in positive symptoms, negative symptoms, affective symptoms and total score were 14.88 (SD.= 6.14), 8.75 (SD.= 3.43), 9.93 (SD.=4.55), 33.55 (SD.=12.10), respectively. This table showed the mean score of psychotic symptom in positive, negative and affective symptoms between the control and experimental groups in pretest were similar, but in posttest means scores of all psychotic symptoms in the experimental had lower than in that control group. (Table 4)

Table 4. The comparison of positive symptoms, negative symptom and affective symptoms between the control group and experimental group at the pretest and posttest.

BPRS Scores	Total		Control		Experimental	
	Mean	SD.	Mean	SD.	Mean	SD.
Pretest						
Positive symptoms	11.63	2.18	11.65	2.09	11.60	2.28
Negative symptoms	7.89	2.30	7.50	1.99	8.28	2.54
Affective symptoms	7.46	2.00	7.80	1.94	7.13	2.03
Total	26.98	3.49	26.95	3.28	27.00	3.72
Posttest						
Positive symptoms	14.88	6.14	16.68	6.60	13.08	5.11
Negative symptoms	8.75	3.43	10.83	3.36	6.68	1.94
Affective symptoms	9.93	4.55	12.33	3.83	7.53	3.92
Total	33.55	12.10	39.83	11.06	27.28	9.68

The comparison of psychotic relapse rate between the control group and the experimental group at 10th week after recruitment revealed that there were 4 cases* (30.8%) in the experimental group and 9 cases* (69.2%) in the control group who were experiencing psychotic relapse by using the relapse criteria of Nuechterlein *et al*.[37] (Figure 3)

The difference between proportions of patients with chronic schizophrenia in the experimental group after receiving the intervention had fewer psychotic relapse than the control group (Kolmogorov Smirnov Z= 4.52, p-value=0.05). (Table 5)

Discussion

The result showed that the symptom self-management strategy was effective in prevention of psychotic relapse in the early phase of psychotic symptoms in patients with chronic schizophrenia after they were receiving intervention. The results of psychotic symptoms scores in the experimental group had lower scores than in the control group in positive symptom, negative symptoms, and affective symptoms. (Table 4) Therefore, this study showed that the psychotic symptom had significantly effected to psychotic relapse (Table 5). This study was congruented with Stengburg *et al*.[38] studied

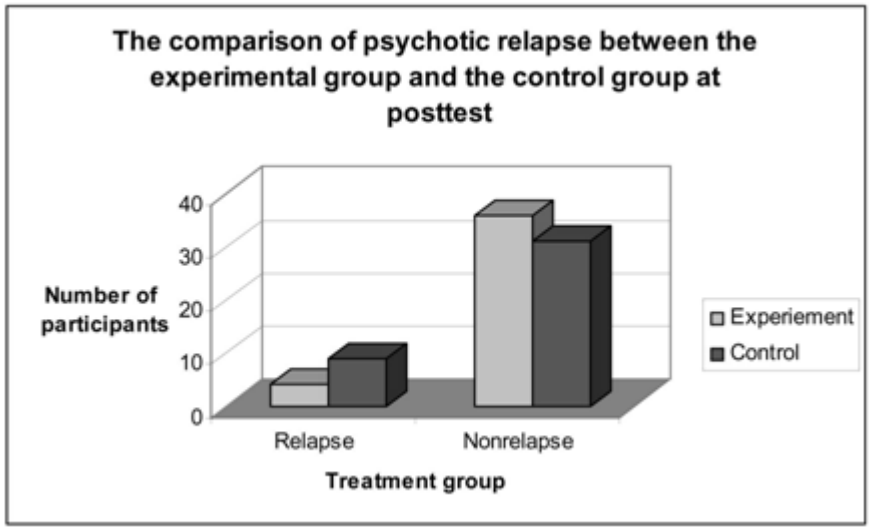

Figure 3. Comparison of psychotic relapse between experimental and control group at posttest.

Table 5. The comparison of psychotic relapse between control group and experimental group.

Psychotic	Experimental		Control		Total		Kolmogorov	p-value
Symptom	N	%	N	%	N	%	Smirnov Z	
None relapse	36	53.7	31	46.3	67	83.8		
Relapse	4	30.8	9	69.2	13	16.3	4.52	0.00
Total	40	100	40	100	80	100		

p<0.05

the effects of the Liberman Module 'Symptom Management' with readmission at the outcome measure. This indicated that the patients who had participated in the training program had had much less serious psychotic symptoms than did the subjects in control group.

The results of this study showed almost of the subjects in experiemental group were decreased of psychotic symptom scores, but some of them still had experiencing relapse (4 cases). On the other hand, the control group had more increased of psychotic symptoms and relapse (9 cases) than the experimental group. The proportion of psychotic relapse in experimental group had statistically significant lower than that of control group. Most patients experiencing psychotic relapse had hallucination (8 cases), delusion (2 cases), thought disorganization (1 case), and hallucination and delusion (2 cases). The psychotic symptom to enhace of relapse was supported in the patients with chronic schizophrenia showed the most prominent symptoms of acute schizophrenia are hallucinations and delusion.[39] Evidence from previous study demonstrated that most schizophrenia patients are chronically ill and have severe symptoms. Many clients have a long duration of illness and continue to experience psychotic relapse and beliefs despite neuroleptic medication. As a result, re-admissions are frequest.[40] After gathering information from the participants in the experimental group who had psychotic relapse showed having conflict with family members, and taking alcohol and substance abuse. Therefore, the relapse in experimental group can cause from other factors that influenced to relapse such as high experess in family [7] and alcohol and substance problem. [41]

The monitoring for prodromal symptoms, involved frequent and regular evaluations and active monitoring, with the use of self-management in coping with symptoms, stress management and increasing antipsychotic doses as indicated when such symptoms were detected were effective in reducing rates of relapse and re-hospitalization of schizophrenia outpatients. This study is congruent with APA[42] who proposed the opinion that early recognition of symptoms and early intervention to manage with the illness would be beneficial in order to prevent the severity of illness. In addition, the result of the study was confirmed by Mueser *et al*.[43] who proposed that all the relapse prevention programs which begin in the initial time of early intervention by focusing on teaching clients to recognize and monitor an early psychotic symptoms of relapse and manage these symptoms to prevent further symptom exacerbation showed decrease in psychotic relapse and re-hospitalization.

As the process of preparing self-management using the group process, this method helped participants to enthusiasm with the weekly monitoring of the symptoms using personal contact in practicing coping skill in their real life. This method was supported by Herz *et al*.[31] who proposed since the time between the onset of prodromal symptoms and relapse can be less than one week in some cases. We, hereby, recommend weekly monitoring initially during the first year with later adjustments in frequency of visit based on clinical judgment on a case-by –case. Group therapy is a clinically effective and cost effective treatment for this purpose.

SSMP was providing knowledge and practical skill process increasing patient's self-ability to manage psychotic symptoms in real life. The acquired knowledge and self-ability increased the patient's self-confidence and will to fraternally live with the disease during stay at home. These result is congruent with previous studies.[44 - 46] They stated that for effective symptom self-management strategies, the patients need to learn about the disease and to understand their own symptoms, including ability to perceive the symptom, ability to assess the severity of the symptoms and its threat to life, recognizing their emotional and behavioral response to the symptoms, practice the skills to manage the symptoms, and evaluate the outcome.

SSMP increased the self-monitoring ability of the patients. Daily monitoring of the psychotic symptom could sustain a desired behavior and encourage patients to be active and responsible for his/her health and to continue practice symptom self-management behavior.

In addition, telephone follow up is useful for continuing care and support at home. The interaction between nurses and patients build up mutual relationship. The process is a positive reinforcement from the nurse by increasing the patients' symptom self-management motivation and leads to sustained care. This finding from the study is congruent with that of Larson[47] who stated that "the purpose of the symptom self-management strategy is to control the symptom status and quality of life, which are components of the symptom outcomes," because the patients who participated in the collaborative symptom management between patient and nurse at home could control and decrease their life disturbance, and increase their satisfaction and perception of their health.

This study had quite broad inclusion criteria that reflected the population of individuals with schizophrenia being treated in the community such as there had to be at least at one hospitalization in the past five years. Another limitation is that group sessions were conducted by one leader. In the future, there is a need to test the program where many individuals serve as leaders so the issue of leadership style/characteristics can be included in the evaluation of the methods. Previous studies on schizophrenic symptoms have found that most patients had early symptom within 2 - 4 weeks before relapse.[8 - 11] Thus, this study had duration time for follow-up 1 month. However, this study should be replicated with extending the longer duration of follow up and long-term evaluation as 2 - 6 months.

Conclusion

This nursing intervention, a Symptom Self-Management Program (SSMP), provides a holistic and patient-based continuous care to promote the patient's symptom self-management ability. Treatment with SSMP can easily be adapted for use at outpatient clinic and Community Mental Health Center because this program can be flexibly integrated into the routine nursing care.

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