



Original Article

Identifying the schizophrenia patients attending the rehabilitation program conducted in Community Mental Health Centers in terms of some demographic variables, characteristics related to the ailment, adaptation to the treatment and self-efficacies

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Abstract

Objectives: The aim of this study is to identify the schizophrenia patients attending the rehabilitation programs conducted in community mental health centers, in terms of demographic variables, characteristics related to the ailment, adaptation to the treatment and self-efficacies.

Methods: The present study, which was planned as a comparative-descriptive study, was conducted at the Community Mental Health Center in Amasya from January through March 2016. The group of this study was comprised of 64 patients, diagnosed with schizophrenia, half of whom would regularly participate in the rehabilitation program. The characteristics of both groups of schizophrenia patients were similar in terms of age, gender, age at the onset of the disease and duration of disease. Data obtained by personal information form, Morisky Adherence Scale, and Self-Efficacy Scale, was analyzed using the SPSS 20.0 software package.

Results: 71.9% of patients having attended the rehabilitation programs had been participating in the programs for longer than 6 months. 50% of the patients who had attended the programs and 25% of the patients who had not attended any program were consistent with the treatment. Although there were no significant differences between groups in terms of the level of medication adherence, schizophrenia patients participating in the rehabilitation program displayed higher levels of medication adherence. Female and single patients were more adaptable than male and married patients to treatment, respectively. The scale of self-efficacy mean score was found as 61.28 ± 12.09 for the group having attended the programs, and 62.82 ± 11.16 for those not having attended. There was no significant difference in self-efficacy scores between the two groups.

Conclusion: In this study, schizophrenia patients having attended rehabilitation programs display a higher adaptation to treatment than those not having attended. In this regard, it was recommended that patients should be encouraged to participate to rehabilitation programs.

Keywords: Rehabilitation; schizophrenia; self-efficiency; treatment adherence.

The discovery of the antipsychotic drugs in the 1950s resulted in important developments, such as the alleviation of disease symptoms, reduction in the level of the severity of

the illness in in-patients, shorter hospital stays, and early discharge of the patients. However, they also caused a revolving door effect, which leads to repeated hospitalizations and chal-

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allenges to service providers in psychiatric departments and emergency rooms.^[1] Rehabilitation services have gained importance with the onset of community mental health services in 1963, and patients were taught daily life activities and self-care practices to achieve their reintegration into society.^[2,3]

Recent progress has been accomplished in the psychiatric rehabilitation concept in Turkey, and related studies were commenced with the publication of the "National Mental Health Policy" by the Ministry of Health (2006), which includes a proposal to "Conduct community-based rehabilitation programs".^[4] One of these studies involves the years from 2011 to 2023, and aims to establish a service network that ensures the proper and sufficient rendering of the mental health services that center on individuals by following the "National Mental Health Action Plan". In line with this purpose, the goals of building on the patient-centered approach and establishing a community-based mental health service model were included in the plan for the treatment and care of the individuals with mental illnesses.^[5]

The psychiatric rehabilitation services provided within the scope of community mental health are defined as a set of comprehensive, coordinated, and long-term strategies that ensure the recovery of the individuals with persistent symptoms and functional disorders and allow the patients to lead a life as normal as possible.^[3,6] The purpose of providing care to individuals with chronic mental health problems is to improve their coping skills and avoid the exacerbation of acute symptoms. The nursing initiatives in this regard focus on helping patients to learn or remember the social behaviors that will enable them to continue their role in society in a satisfactory manner.^[7]

Psychiatric rehabilitation is one of the main components of the treatment of schizophrenia, which is recognized as a chronic mental disorder. Supporting the treatment adherence of patients who receive treatments outside of an institution gives way to their more successful integration into society.^[1] However, the studies carried out with schizophrenia patients revealed that the patients had a low adherence to treatment and non-adherence to treatment was a serious problem in the treatment of schizophrenia patients.^[8-13] Non-adherence to treatment can manifest itself in many forms, from non-use or irregular use of prescribed medications, not keeping appointments, and complying with follow-up care.^[14] This often-encountered problem can also result in relapse and repeated hospitalizations.^[12] Therefore, adherence to treatment is a serious issue that needs to be addressed in rehabilitation. The studies showed that schizophrenia patients who participated in rehabilitation programs were more adherent to treatment, compared with their adherence prior to the programs.^[15-19]

In chronic diseases that involve a loss of functioning, such as schizophrenia, another issue that needs to be addressed is self-efficacy. Self-efficacy is defined as an individual's perception of their ability to successfully execute a specific action or control the events in their lives. It is also defined as an individual's judgment of their personal capacity to accomplish a

certain level of performance.^[20] The studies carried out with schizophrenia patients and their families showed that rehabilitation programs increased self-efficacy levels and reduced the loss of functioning.^[21-25]

Although there are limited numbers of studies that compare the schizophrenia patients who participated in rehabilitation programs with the patients who did not participate in any rehabilitation program in terms of their adherence to treatments and self-efficacy, these programs are thought to improve the treatment adherence and self-efficacy of the patients. The present study describes the schizophrenia patients who participated in the rehabilitation programs conducted in the Community Mental Health Center (CMHC) as well as those who did not participate in such programs in terms of their sociodemographic characteristics, disease characteristics, treatment adherence, and self-efficacy. The fundamental research questions were:

1. What is the treatment adherence level of the patients?
2. Is there a significant difference between the patients who participated in rehabilitation programs and who did not participate in any rehabilitation program in terms of their adherence to treatment?
3. What is the self-efficacy level of the patients?
4. Is there a significant difference between the patients who participated in rehabilitation programs and those who did not participate in any rehabilitation program in terms of their self-efficacy levels?

Materials and Method

The Type of the Study

The study is a descriptive-comparative study.

The Location and Period of the Study

The study was carried out during the period from January 2016 through March 2016 in the Recep Akyılmaz Community Mental Health Center in Amasya, Turkey. The center commenced its operations on 29 January 2014 under the direction of the Amasya University Sabuncuoğlu Şerefeddin Training and Research Hospital. The center continues its operation in accordance with the "Work Guide for Community Mental Health Centers" and the "Directive on the Community Mental Health Centers" that became effective by the approval of the Minister in 2014. It is located in the city center and includes Amasya Province, which has a population of 322,000, including its counties.

The center's program begins each morning with warm-up exercises and 'good morning' meetings, carried out under the leadership of a nurse or a psychologist. The program includes weekly social skills training, and psychoeducation. A psychoeducation group for the family is led once a month by a psychiatrist. Personal counselling services are provided by nurses, psychologists, and social workers. Moreover, art and

occupational therapy, music therapy, artistic activities such as the theater, and activities such as movie screenings and book readings are offered every day. These activities are led by the expert trainers assigned by the public education center.

The Study Population and Samples

The study population comprised 120 schizophrenia patients enrolled in the CMHC. The sample group included a total of 64 patients comprising 32 patients who were followed up after their diagnosis of schizophrenia, and who regularly attended the rehabilitation program (at least once a week) and 32 patients who did not participate in any rehabilitation program. The patients who met the criteria of being diagnosed with schizophrenia, having insight, not having a problem with reading and understanding, and agreeing to participate in the study were included in the study sample. All of the patients who regularly attended the rehabilitation programs and met the criteria agreed to participate in the study. A list of the patients who did not attend any rehabilitation program was compiled, and the patients selected from the list were contacted by phone, and 32 patients were selected. A total of 44 patients were contacted by phone and efforts to reach 9 of the 44 patients failed, two patients declined to participate in the interviews, and one patient had a prior diagnosis of mental retardation. The age, gender, age at the onset of the disease, and duration of the disease of the patients who regularly attended rehabilitation programs and patients who did not attend any rehabilitation program were similar to each other ($p>0.05$).

Data Collection Tools

A Personal Information Form, the Morisky Adherence Scale (MAS), and the Self-Efficacy Scale (SES) were used to collect data.

Personal Information Form

The questionnaire was prepared by the researchers in accordance with the relevant literature and comprised 17 questions to elicit the sociodemographic characteristics and disease-related characteristics of the patients.

Morisky Adherence Scale

The scale was developed by Donald E. Morisky; the validity of the scale was assessed by Morisky, Green, and Levine in 1986 (Cronbach $\alpha=0.61$). The validity of the scale was evaluated by Yılmaz in 2004, who also translated the scale into Turkish (Cronbach $\alpha=0.63$). The scale comprised four items, contained yes/no questions, and reported the adherence of the patients to medication in three levels as "high", "moderate", and "low". If the answers to all questions were "no", medication adherence was deemed to be at a high level; if the answers to one or two questions were "yes", medication adherence was deemed to be at a moderate level; if the answers to three or four questions were "yes", medication adherence was deemed to be at a

low level. Furthermore, the patients who answered "yes" to all questions were regarded as "adherent" and the patients who answered "no" to at least one of the questions were regarded as "non-adherent".^[26]

Self-Efficacy Scale

It is a 23-item, Likert-type self-evaluation scale that was developed by Sherer and Maddux (1982), and the validity and reliability of the scale were tested by Gözüm and Aksayan^[20] (1999). For every item in the scale, the participants were asked to mark one of the following options: 1: "Does not describe me at all.", 2: "Describes me a little.", 3: "Undecided.", 4: "Describes me well.", 5: "Describes me very well.". Every item is based on the scores given by the participants. However, the 2nd, 4th, 5th, 6th, 7th, 10th, 11th, 12th, 14th, 16th, 17th, 18th, 20th, and 22nd items are reversely scored. The possible lowest score on the scale is 23 and the possible highest score on the scale is 115. The high total scores on the scale indicate a high overall self-efficacy perception, while the low total scores on the scale indicate a low level of overall self-efficacy perception.

Data Collection

After receiving the permission of the related institution and approval of the board of ethics, the 32 patients who came to the CMHC were informed about the study and their consent was obtained. The interviews with the patients who regularly came to the CMHC during the 3-month period were carried out at the center, while the interviews with the patients who did not come to the CMHC were carried out over the phone. The patients were randomly selected and called from the list compiled of the patients who did not come to the center, and data were collected after obtaining the verbal consent of the 32 patients who agreed to participate in the study after receiving information about the study. The interviews took about 20-25 minutes.

Data Analysis

Using the SPSS 20.00 package program to analyze the data obtained in the study, the researchers conducted frequency analysis, chi-square, two-sample t-test, the Mann Whitney U test, and the ANOVA test. A significance level of $p<0.05$ was accepted for all results.

The Ethical Dimension of the Study

Prior to the study, written permission was obtained from the Amasya Public Hospital Association and Amasya University Board of Ethics for Clinical Trials, and the informed consent of the patients was obtained.

The Limitations of the Study

The number of the patients who attended rehabilitation programs (32) is an indicator of the limitation of the sample size.

Data collection through face-to-face interviews with the patients who came to the center while collecting data through telephone interviews with the patients who did not come to the center may have affected the accuracy of the information provided by the participants. This limitation should be taken into consideration when interpreting the results.

Results

A total of 64 patients comprising 32 patients who attended rehabilitation programs and 32 patients who did not attend any rehabilitation program were included in the study. The mean age of the patients who attended the program was 37.03 ± 10.84 and the mean age of the patients who did not attend any rehabilitation program was 36.62 ± 9.59 . Of the patients who attended the programs, 78.1% were male and 62.5% were unmarried. Of the patients who did not attend any rehabilitation program, 56.3% were male and 50.0% were unmarried. Of the patients who attended the programs, 34.4% were high school graduates and 25.0% were employed, whereas 50% of the patients who did not attend any rehabilitation program were primary school graduates and 18.8% of the same group were employed. Of the patients who attended the programs, 53.1% were living with their parents and sibling(s), while 50% of the patients who did not attend any program were living with their partners and children.

The mean age at the onset of the disease was 22.09 ± 6.97 in patients who participated in the rehabilitation programs, while it was 22.93 ± 4.66 in the patients who did not participate in any rehabilitation program; the mean duration of the disease in patients who attended the programs and in patients who did not attend any rehabilitation program were 14.93 ± 7.85 years and 13.68 ± 7.87 years, respectively. The mean number of hospitalizations of the patients who attended the program was 3.09 ± 2.70 , while it was 2.59 ± 2.28 in patients who did not attend any program. Of the patients who attended a program,

71.9% had attended the programs for periods longer than 6 months (Table 1).

Of the patients who attended a program and of those who did not attend any program, 50% and 25% were adherent to treatment, respectively. The medication adherence levels of the groups were not significantly different ($\chi^2=3.267$ $p=0.071$, $p>0.05$), although the medication adherence of the schizophrenia patients who attended the rehabilitation programs was higher than that of the patients who did not (Table 2).

The groups did not significantly differ in age, gender, marital status, educational background, and employment status in terms of medication adherence ($p>0.05$). As the age of the patients who participated in the study increased, their adherence to treatment decreased; the female patients and unmarried patients were more adherent to treatment when compared with the male patients and married patients, respectively. In both groups, the level of adherence to treatment increased when the patient had a higher education level (Table 3).

In patients who attended the rehabilitation programs, there was no significant difference between the duration of the disease and the number of hospitalizations with respect to medication adherence ($p>0.05$). There was a significant difference between the duration of the disease in patients who did not participate in any program with respect to medication adherence ($p<0.05$). Medication non-adherence increased as the duration of the disease increased. No significant difference with respect to medication adherence was found compared to the duration of the hospitalizations ($p>0.05$). On the other hand, medication non-adherence increased when the number of hospitalizations increased. There was no significant difference in the duration of participation in rehabilitation programs with respect to medication adherence ($p>0.05$, Table 4).

The mean self-efficacy score received by the patients who attended the rehabilitation programs was 61.28 ± 12.09 , while the mean score of the patients who did not was 62.82 ± 11.16 .

Table 1. Disease-related characteristics and participation in the rehabilitation programs

	The group comprising patients who participated in the rehabilitation programs (n=32)	The group comprising patients who did not participate in any rehabilitation program (n=32)
	Mean±SD	Mean±SD
Age at the onset of the disease	22.09±6.97	22.93±4.66
Duration of the disease (years)	14.93±7.85	13.68±7.87
Number of hospitalizations	3.09±2.70	2.59±2.28
	n (%)	
Duration of attendance at rehabilitation programs		
Less than 6 months	9 (28.1)	
More than 6 months	23 (71.9)	

SD: Standard deviation.

There was no significant difference between the two groups in terms of the self-efficacy scores ($p>0.05$, Table 5).

There were no significant differences between the age, gender, educational background, and employment status of the two

Table 2. The medication adherence levels of the patients

			n	%
The group comprising patients who participated in the rehabilitation programs (n=32)	Adherence level	High	16	50.0
		Moderate	13	40.6
		Low	3	9.4
	Medication adherence	Adherent	16	50.0
		Non-adherent	16	50.0
The group comprising patients who did not participate in any rehabilitation program (n=32)	Adherence level	High	8	25.0
		Moderate	17	53.1
		Low	7	21.9
	Medication adherence	Adherent	8	25.0
		Non-adherent	24	75.0
All groups (n=64)	Adherence level	High	24	37.5
		Moderate	30	46.9
		Low	10	15.6
	Medication adherence	Adherent	24	37.5
		Non-adherent	40	62.5

Table 3. Medication adherence based on the demographic characteristics of the patients

	The group comprising patients who participated in the rehabilitation programs (n=32)				Group comprising patients who did not participate in any rehabilitation program (n=32)			
	Adherent		Non-adherent		Adherent		Non-adherent	
	n	%	n	%	n	%	n	%
Age								
Aged 37 and younger	11	57.9	8	42.1	6	37.5	10	62.5
Over 37 years of age	5	38.5	8	61.5	2	12.5	14	87.5
	$\chi^2=0.518$; $p=0.472$				$\chi^2=2.583$; $p=0.108$			
Gender								
Female	4	57.1	3	42.9	4	28.6	10	71.4
Male	12	48.0	13	52.0	4	22.2	14	77.8
	$\chi^2=0.177$; $p=0.674$				$\chi^2=0.164$; $p=0.685$			
Marital status								
Unmarried	11	55.0	9	45.0	5	31.2	11	68.8
Married	5	41.7	7	58.3	3	18.8	13	81.2
	$\chi^2=0.133$; $p=0.715$				$\chi^2=0.646$; $p=0.422$			
Educational background								
Literate-Primary school	3	27.3	8	72.7	4	20.0	16	80.0
Middle school-High school-								
Higher education	13	61.9	8	38.1	4	33.3	8	66.7
	$\chi^2=2.216$; $p=0.137$				$\chi^2=0.689$; $p=0.407$			
Employment status								
Unemployed	13	54.2	11	45.8	6	23.1	20	76.9
Employed	3	37.5	5	62.5	2	33.3	4	66.7
	$\chi^2=0.646$; $p=0.422$				$\chi^2=0.265$; $p=0.607$			

Table 4. Medication adherence based on the characteristics of the disease and attendance at rehabilitation programs

	The group comprising patients who participated in the rehabilitation programs (n=32)				Group comprising patients who did not participate in any rehabilitation program (n=32)			
	Adherent		Non-adherent		Adherent		Non-adherent	
	n	%	n	%	n	%	n	%
Duration of the disease								
14 years and below	8	50.0	8	50.0	7	38.9	11	61.1
Over 14 years	8	50.0	8	50.0	1	7.1	13	92.9
	$\chi^2=0.000$; $p=1.000$				$\chi^2=4.101$; $p=0.043$			
Number of hospitalizations								
Never hospitalized	0	0.00	1	100.0	2	40.0	3	60.0
3 or less	11	52.4	10	47.6	6	30.0	14	70.0
4 or more	5	50.0	5	50.0	0	0.00	7	100.0
	$\chi^2=0.114$; $p=0.735$				$\chi^2= 2.719$; $p=0.099$			
Duration of attendance at the rehabilitation programs								
Less than 6 months	6	66.7	3	33.3				
More than 6 months	10	43.5	13	56.5				
	$\chi^2=1.348$; $p=0.246$							

Table 5. Total self-efficacy scores of the patients

	Self-efficacy score	
The group comprising patients who participated in the rehabilitation programs (n=32)	61.28±12.09	Two-sample t-test $t=-0.526$; $p=0.601$
The group comprising patients who did not participate in any rehabilitation program (n=32)	62.82±11.16	
All groups (n=64)	62.04±11.57	

groups with respect to the self-efficacy scores ($p>0.05$). However, the self-efficacy scores of the patients who were aged 37 (mean age) or younger were higher in both groups; the self-efficacy scores of the male patients who did not attend any rehabilitation program were higher than that of the female patients; in both groups, the self-efficacy scores of the unemployed patients were higher than that of the employed patients (Table 6).

The self-efficacy scores of the patients who attended the rehabilitation programs were not significantly different with respect to the marital status of the patients ($p>0.05$). The self-efficacy scores of the unmarried patients were higher than that of the married patients. In the group that included patients who did not participate in any rehabilitation program, the self-efficacy scores of the unmarried patients were significantly different from the self-efficacy scores of the married patients ($p<0.05$, Table 6).

The examination of the self-efficacy scores with respect to the duration of the disease, number of hospitalizations, and medication adherence in both groups showed that the self-efficacy scores were not significantly different ($p>0.05$). Among the

patients who did not participate in any program, the patients who suffered from the disease for less than 14 years (mean duration of the disease), were never hospitalized and were non-adherent with treatment received higher self-efficacy scores. There were no significant differences regarding the self-efficacy scores of the patients who attended the programs when the terms of the duration of their participation in rehabilitation programs was compared ($p>0.05$, Table 7).

Discussion

In this study in which sociodemographic and disease-related characteristics, treatment adherence, and self-efficacy of the patients who attended or did not attend the rehabilitation program conducted in a CMHC were examined, the two groups were found to be similar to each other in terms of their age, gender, age at the onset of the disease, and duration of the disease. The mean ages revealed that the majority of the patients were in their 30s. The mean age at the onset of the disease was early in both groups (22-23 years of age). In sim-

Table 6. Self-efficacy scores of the patients based on their demographic characteristics

	Self-efficacy score	
	The group comprising patients who participated in the rehabilitation programs (n=32)	The group comprising patients who did not participate in any rehabilitation program (n=32)
Age		
Aged 37 and younger	61.57±13.18	66.06±9.23
Over 37 years of age	60.84±10.80	59.56±12.24
Two-sample t-test	t=0.166; p=0.870	t=1.696; p=0.100
Gender		
Female	62.14±11.09	60.42±8.95
Male	61.04±12.56	64.66±12.55
Two-sample t-test	t=0.210; p=0.835	t=-1.068; p=0.294
Marital status		
Unmarried	63.15±13.14	67.93±7.84
Married	58.16±9.84	57.68±11.83
Two-sample t-test	t=1.134; p=0.266	t=2.887; p=0.007
Educational background		
Literate-Primary school	61.09±9.14	62.10±12.28
Middle school-High school-Higher education	61.38±13.59	64.00±9.38
Two-sample t-test	t=-0.063; p=0.950	t=-0.460; p=0.649
Employment status		
Unemployed	61.87±12.61	63.73±11.26
Employed	59.50±10.96	58.83±10.74
Two-sample t-test	t=0.475; p=0.638	t=0.967; p=0.341

ilar studies conducted with schizophrenia patients, the mean age was also between 37 and 43, and the disease had an early onset.^[8,9,12,15,18,21,27-29] The age at the onset of schizophrenia in men was between 15 and 25, while it was between 25 and 35 in women.^[1,30] The early age at onset found in this study is attributable to the higher number of male patients included in the study.

The majority of the patients were male, unmarried, and unemployed. In previous studies carried out with schizophrenia patients, the number of male patients was high, and the majority of the patients were unmarried and unemployed.^[8,9,12,15,18,21,27-29] According to the epidemiology of schizophrenia, the rate of the occurrence of the disease is equal in women and men, and can affect individuals from all social classes.^[1,31] Moreover, women experience a better course of the disease.^[30] The higher number of female patients in the group who did not participate in any rehabilitation program compared with the number of female patients who participated in rehabilitation programs reveals that most of the patients who attended the CMHC were male. This indicates that women are less likely to seek psychosocial help than men. The higher number of male and unmarried patients compared with female and married patients in all studies can be attributed to the dependability of women's decision-making about their participation in the studies on the opinions of their partners or people who they live with.

The education level of the patients who attended the programs was higher than that of the patients who did not participate in any program. In agreement with this study, in a study in which the symptoms and insight of the schizophrenia patients who attended rehabilitation programs were compared with those who did not, the education level of the patients who attended the programs was found to be higher than those who did not.^[27] In another study that was carried out to examine the effects of a psychiatric rehabilitation program on schizophrenia patients who were taking medication, compared with patients who were taking medication but did not participate in the program, it was found that the patients who attended the program had a higher education level as well.^[21] The higher education level among the patients who attended rehabilitation programs indicates that the tendency to seek community-based mental health services as well as different treatments may be associated with sociocultural characteristics.

The rate of treatment non-adherence in psychiatric patients was determined to be high. In a study carried out with 186 psychiatric patients, 40.9% of the patients were adherent to drug therapy, whereas 39.9% of the patients were non-adherent, and an adherence level of 19.9% of the patients was not sufficient.^[32] In another study conducted in the polyclinic of a psychiatry hospital in Nigeria, about half of the patients were non-adherent with treatment.^[10] In a study in which the views

Table 7. Self-efficacy scores based on patient characteristics, medication adherence, and attendance at rehabilitation programs

	Self-efficacy score	
	The group comprising patients who participated in the rehabilitation programs (n=32)	The group comprising patients who did not participate in any rehabilitation program (n=32)
Duration of the disease		
14 years and below	61.75±14.03	64.66±9.76
Over 14 years	60.81±10.24	60.42±12.72
Two-sample t-test	t=0.216; p=0.831	t=0.415; p=0.294
Number of hospitalizations		
Never hospitalized	61.00	68.40±13.06
3 or less	61.71±12.88	61.20±11.01
4 or more	60.40±11.56	63.42±10.51
ANOVA test	F=0.038; p=0.963	F=0.836; p=0.443
Medication adherence		
Adherent	61.06±11.69	61.75±12.58
Non-adherent	61.50±12.85	63.16±10.92
	Z=-0.679; p=0.497	t=-0.306; p=0.762
	Mann-Whitney U	Two-sample t-test
Duration of attendance at the rehabilitation programs		
Less than 6 months	66.77±7.83	
More than 6 months	59.13±12.90	
Two-sample t-test	t=1.652; p=0.109	

of the relatives of the patients regarding treatment adherence by the patients with chronic psychiatric disorders were determined, 67.1% of the patients were reported to take their medications irregularly.^[13]

As in the present study, the MAS was used in the previous studies to evaluate the treatment adherence of psychiatric patients. In agreement with other studies, the results of these studies also revealed insufficient treatment adherence in the patients. In a study in which medication adherence of in-patients in a psychiatric clinic was evaluated, it was found that 20% of the patients had good medication adherence, 48.6% of the patients had moderate medication adherence, and 31.4% of the patients had poor medication adherence.^[11] In a study to determine the side-effects, medication adherence, and relationship between side-effects and medication adherence in the psychiatric outpatients who used antipsychotic drugs, the medication adherence of almost half of the patients (47.9%) was found to be at a high level.^[33] In another study focusing on the identification of the factors that cause treatment non-adherence in psychiatric patients, it was determined that 34% of the patients with psychotic disorders are non-adherent to medication.^[34]

The general treatment non-adherence rate in individuals with chronic diseases is 50%.^[35] Among the psychiatric disorders, schizophrenia is known to be chronic and treatment non-adherence is therefore an important issue in schizophrenia. In a study carried out in Australia, the medication nonadherence

of schizophrenia patients was determined to be high.^[12] In a study carried out in Wisconsin (a state in the U.S.A.) to examine the relationship between medication non-adherence and hospitalization and hospital cost, it was determined that 31% of the patients with schizophrenia or schizoaffective disorder took their medications irregularly.^[36] In a study with 876 schizophrenia patients, the MAS was used and medication non-adherence was determined in 48.4% of the patients.^[8] In another study in which the factors affecting treatment adherence in schizophrenia patients were evaluated, the Medication Adherence Rating Scale was used and the treatment adherence of a great majority of the patients participating in the study (85.1%) was found to be low.^[9] In agreement with the previous studies, 62.5% of the schizophrenia patients who participated in this study were non-adherent to treatment.

The reinforcement of medication with psychosocial programs increases the effectiveness of the treatment.^[3,19] In a study in which the effect of Social Skills Training in the community mental health treatment of schizophrenia was investigated, the adherence of the patients to medication increased with the program. The rate of voluntary use of regular medication was 63.2% at the beginning of the training and reached 79% after training.^[19] In a study in which the groups comprising patients who participated or did not participate in the "outpatient schizophrenia follow-up program" were examined, 86.3% of the group comprising patients who participated in the pro-

gram were adherent to treatment, while 55.9% of the group comprising patients who did not participate in the program regularly took their medications.^[16] A treatment adherence program regarding attitude towards medication, and medication adherence, was conducted with the in-patients in a forensic psychiatry clinic and, compared to the control group, the medication adherence significantly increased in the experimental group.^[17] In a study carried out with schizophrenia patients to whom a multidimensional psychosocial program was provided within the scope of rehabilitation services, the medication adherence of the patients increased from 10% to 71.7% after the program.^[15] In a study carried out to evaluate the effectiveness of a treatment adherence program in chronic schizophrenia patients, the pre-test results of both the experimental and control group showed that the patients had low treatment adherence; however, the treatment adherence levels of the patients in the experimental group significantly increased after the adherence program.^[18] In agreement with the previous studies, the schizophrenia patients who attended the rehabilitation programs had a higher medication adherence in this study as well.

Educating the patients and their families on mental health and strengthening their problem-solving skills have led to improved insight and medication adherence, which, in turn, resulted in a decrease in the number of relapses and hospitalizations.^[15] In patients who only receive drug therapy, the likelihood of relapse and re-hospitalization is around 40%.^[30] It was reported that the adherence of the patients to treatment deteriorated as the duration of the disease lengthened, and the exhaustion due to the chronic course of the disease as well as the patients' lack of faith in recovery, led to treatment non-adherence.^[13]

In a study conducted with the schizophrenia patients to whom a multidimensional psychosocial program was provided within the scope of rehabilitation services, the follow-up of the patients revealed that after three years, 88% of the patients who effectively continued the program had a high medication adherence.^[15] The low level of attendance at outpatient treatment centers was determined to increase the likelihood of treatment non-adherence.^[10] In this study, medication non-adherence increased as the duration of the disease grew longer, and as the number of hospitalizations increased. The higher medication adherence in the patients who attended the rehabilitation programs is attributable to their regular visits to the treatment institution, and to their receiving regular polyclinic management.

A significant impairment in social and occupational functioning and challenges in daily functions such as self-care, independent living skills, and social activities are known to emerge in chronic psychotic disorders such as schizophrenia.^[15] The patients need to make a greater effort to improve their life quality and increase their self-efficacy levels.^[37] In the relevant scientific literature, the integration of a suitable medical treatment with psychosocial rehabilitation programs is high-

lighted as the most effective method in the treatment of negative symptoms, such as decreasing self-efficacy levels.^[15,24] In addition to regular drug therapy, education programs which aim to improve psychological and social skills, and reduce the ability to function, psychosocial interventions are crucial. Psychosocial interventions can help improve the self-efficacy of the patients.^[30,37]

There are studies that show that schizophrenia patients who attend rehabilitation programs demonstrate an increasing loss in the ability to function. Self-efficacy in interpersonal behaviors was observed to have increased in schizophrenia patients who benefitted from day care services.^[23] At the CMHC in Bolu (Turkey), the first CMHC established in Turkey, the effect of services provided to schizophrenia patients on disability was investigated. The results showed that the disability scores of the patients who regularly attended the program for one year had significantly dropped.^[22] In another study in which the loss of functioning was evaluated to determine the effects of rehabilitation programs on schizophrenia patients, the disability scores of the study group were higher than that of the control group.^[21] In a study in which group work was implemented, the disability assessment scores of the patients who were included in the study showed that the pre-psychoeducation mean score was significantly lower than the post-psychoeducation mean score.^[24] In another study, in which the effects of a family-to-family support program provided to the families of schizophrenia patients that included information, family loading, and self-efficacy were investigated, it was determined that the self-efficacy scores of the families significantly increased after the program.^[25]

In the present study, the two groups were not significantly different from each other in terms of the self-efficacy scores. This gives rise to the conclusion that the issue should be addressed in rehabilitation units, and the activities to strengthen the patients in this regard should be increased.

Conclusion

The study showed that treatment adherence of the patients who attended rehabilitation programs was higher than that of the patients who did not attend any rehabilitation program. Compared with the male patients, female patients were relatively more adherent to treatment and compared with the married patients, unmarried patients were relatively more adherent to treatment. In this respect, encouraging the patients to participate in rehabilitation programs is recommended.

The self-efficacy of schizophrenia patients was not associated with their participation in the rehabilitation programs. The prospective planning of this type of studies is of importance in the long-term monitoring of the effects of rehabilitation services. Original studies are needed on the type of services that can benefit not just schizophrenia patients, but also patients with other psychiatric diseases. These studies can contribute to community mental health nursing practices.

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