Research / Araştırma

Relationship Between Drug Compliance, Coping with Stress, and Social Support in Patients with Bipolar Disorder

Ayse Aksoy[1], Meral Kelleci[2]

[1]Sivas Numune Hospital, Department of Pscyhiatry, Sivas - Turkey
[2]Cumhuriyet University, Faculty of Health Sciences, Department of Mental Heath and Psychiatric Nursering, Sivas - Turkey

ABSTRACT

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Objective: In bipolar disorder, recurrence rate is relatively high. With each episode, the risk of a new episode is increased. The first choice is drug treatment. However, patients have serious difficulties in drug compliance. This study was conducted to investigate drug compliance of patients with bipolar disorder, and to determine relationships between drug compliance, coping with stress, and social support.

Method: The target population of the study included 280 patients registered in a state hospital with the diagnosis of bipolar disorder in 2011, residing in the city center, and having no other psychiatric disorders. Of these 280 patients, 150 who agreed to participate in the study and accepted to be visited at home after they were telephoned comprised the study sample. Of the patients in the target population, phone numbers and addresses were changed in 112 patients, and 18 refused to have a home-visit, so they were excluded from the study. Data were collected using the personal information form, Morisky Medication Adherence Scale, Multidimensional Scale of Perceived Social Support and Ways of Coping Scale.

Results: In this study, it was determined that 55.3% of the patients did not comply with drug treatment. The patients with poor drug compliance preferred mainly desperate approach and submissive approach subdimensions of the Ways of Coping Scale more. There was no difference between patients with and without drug compliances in terms of social support.

Conclusions: It is considered that development of effective coping strategies would promote drug compliance in patients with bipolar disorder.

Keywords: Bipolar disorder, coping, medication compliance, nursing, social support

ÖZET

Bipolar hastalarda ilaç uyumunun stresle başetme ve sosyal destekle ilişkisi

Amaç: Bipolar bozukluğun tekrarlama oranı oldukça yüksektir. Geçirilen her atak yeni bir atak geçirme riskini arttırır. Tedavide ilk seçenek ilaç tedavisidir. Ancak hastaların ilaç tedavisine uyumla ilgili ciddi sorunları bulunmaktadır. Bu çalışma bipolar hastaların ilaç uyumunu belirlemek, stresle başetme ve sosyal destekle ilişkisini incelemek amacı ile yapılmıştır.

Yöntem: Araştırmanın evrenini bir devlet hastanesine 2011 yılında bipolar bozukluk tanısı ile kayıtlı olan, il merkezinde yaşayan, ek psikiyatrik tanısı olmayan 280 hasta, örneklemi ise telefonla aranarak araştırmaya katılmayı ve ev ziyaretini kabul eden 150 hasta oluşturdu. Evreni oluşturan hastalardan 112 kişiye telefon ve adres değişikliği, 18 kişiye ise ev ziyaretini kabul etmeme nedeni ile ulaşılamamıştır. Veriler, "Kişisel Bilgi Formu", "Morisky Uyum Ölçeği", "Çok Boyutlu Algılanan Sosyal Destek Ölçeği" ve "Stresle Başa Çıkma Tarzları Ölçeği" ile toplandı. İlaç uyumu iyi olan ve ilaç uyumu olmayan hastalar stresle baş etme biçimleri ve sosyal destek puanları açısından karşılaştırıldı.

Bulgular: Çalışmada hastaların %55.3'ünün ilaç tedavisine uyumsuz olduğu belirlendi. Uyumu kötü olan hastalar stresle baş etme tarzları alt boyutlarından çaresiz yaklaşım ve boyun eğici yaklaşımı daha fazla kullanıyorlardı. Sosyal destek açısından ilaç tedavisine uyumu olan ve olmayan hastalar arasında bir fark yoktu.

Sonuç: Bipolar hastalarda etkili baş etme yöntemlerinin geliştirilmesinin ilaç uyumunu arttırmada bir çözüm olabileceği düşünüldü.

Anahtar kelimeler: Bipolar bozukluk, başa çıkma, ilaç uyumu, hemşirelik, sosyal destek

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INTRODUCTION

Bipolar disorder causes great harms in people's lives, because it leads to suicidal attempt, substance abuse, and high rate of hospitalization, poor academic success, interpersonal communication and legal problems (1-3). World Health Organization has defined bipolar disorder in diseases which cause severe disability (4). Life-long prevalence estimations are 0.6% for bipolar-I, 0.4% for bipolar-II, and 1.4% for subthreshold bipolar disorder (5). The recurrence rates of the disease are 35.7-55% in one year, and 73% in 5-year time (6-9). Each episode increases the risk of a new attack, and disability and losses caused by the disease become more severe with each attack (10).

Treatment is required in bipolar disorder to take frequency and intensity of attacks under control, to prevent unfavorable psychosocial results, to decrease recurrence and mortality rates due to accompanying diseases, and to improve functionality between attacks (10-14). In treatment of bipolar disorder, the first line option is drug treatment, and drugs used with psychotherapy sessions may provide 60-80% efficacy of patient's daily life. The efficacy of drug treatment is directly related to the compliance (2,15-17).

Incompliance to drug treatment is a commonly encountered problem with bipolar patients. Drug incompliance rates vary from 20% to 60% in bipolar patients (2,3,17-20). Drug incompliance causes patients diagnosed with bipolar disorder to have lower life quality (2,3), increased hospitalization rate, increased expenses of care and high mortality (2,20,21), depressive attacks, suicide, functional deterioration in addition to treatment disorders and signs (22). Studies related to factors affecting drug compliance and incompliance are quite limited in patients with bipolar disorder. In a previous study, factors related to drug compliance were reported as clinical/demographic variables; individual, psychological, and social causes and health beliefs; factors related to treatment; clinician-patient relationship; cognitive and neuropsychological defects (23). In addition to these factors, patient ways of coping with stress may be listed as a cause affecting the drug compliance. Relationship between mood and stress is known for years. Environmental events are accepted as possible triggers of depressive attacks. It is known that many severe stressors occur before depressive attacks as well as chronic stressful life-style with stressing events may lead them (24). Stress factors play a role in manic attack development, and recurrence is 4.5 folds increased in patients with high stress levels (12). However, there is no information in the literature about relationships between ways of coping with stress and drug compliance. However, individuals who cannot effectively cope with stress, drug incompliance rates may be higher. On the other hand, there are studies investigating relationships between drug compliance and social support, but these studies have been performed on individuals with other psychiatric diseases. As known, social support is important in providing healing (25). Sufficient social support will favorably affect health protection and improvement, treatment and rehabilitation of disease treatments, so they will support patient compliance with the disease, and decrease social isolation so that patient's life quality is increased (26). Deficiencies in familial and social supports cause compliance problems, and negative effects on treatment (27). However, there are no studies in the literature investigating whether social support is a factor affecting drug compliance in patients diagnosed with bipolar disorder. Currently, studies conducted about increasing compliance to decrease treatment and healthcare costs, and to improve life quality have gained more importance. It is believed that as an important problem of our country, studies are required to increase drug compliances of patients with psychiatric diseases.

In the present study, we aimed to determine drug compliance and ways of coping with stress in patients with bipolar disorder, and to analyze the situation and contribute in future programs in social support and some factors which may affect this issue.

METHOD

The present study is a cross-sectional clinical study performed to determine patient drug compliance, ways of coping with stress, and social support relationships in bipolar patients.

Participants

Patients with bipolar disorder (n=280) presented to Sivas Numune Hospital between dates 01 January to 31 December 2011 and who were residents in Sivas downtown were included into the study. Among 168 patients who responded to our phone call, 150 accepted to participate in the study.

Data Collection

Study data were collected from patients after calling them up to give information about the study, and accepted participation in the study by visiting them at home. Informed consent forms were signed after the explanation and forms were filled up during interviews. Study data were collected by using "Personal Information Form", "Morisky Compliance Questionnaire", "Ways of Coping Inventory" and "Multidimensional Scale of Perceived Social Support".

Personal Information Form: Social and clinical characteristics were collected by using an information form prepared by the researchers.

Morisky Compliance Scale (MCS): This scale was developed by Morisky et al. (28). Cronbach's alpha was found to be 0.61 in this study. Turkish validation and reliability study of the scale was performed by Yilmaz (29). The scale is composed of 4 items, and it is answered as "Yes" or "No", and patient drug compliance is evaluated in three levels as "good", "moderate" or "bad". The Cronbach's alpha coefficient of the scale was 0.63 (29). The scale was used in the present study to measure patient drug compliance. The Cronbach's alpha coefficient was determined as 0.69 in the present study.

Scale of Ways of Coping with Stress: "Scale of Ways of Coping with Stress" was adapted into Turkish from Ways of Coping Inventory" scale which was developed by Folkman and Lazarus (30). The Turkish validity and reliability of the scale was performed by Şahin and Durak (31). The scale is composed of 30

items, and is in Likert type. The scale has two dimensions as effective ways, and ineffective ways against emotions. The scale does not have a total score, but it is graded by total scores of each subscale. For each subscale, increase in total score is evaluated as an individual uses that coping way more commonly.

The Cronbach's alpha reliability coefficients of subscales of Scale of Ways to Cope with Stress are as follows: optimistic approach α=0.68; self-esteemed approach α=0.80; desperate approach α=0.73; submissive approach α=0.70, and seeking for social support approach α=0.47 (31).

In the present study, general Cronbach's alpha reliability level of coping with stress was determined as 0.71. The lower dimension of optimistic approach was 0.65; lower dimension of self-esteemed approach was 0.82; lower dimension of desperate approach was 0.73, the lower dimension of submissive approach was 0.58; and seeking social support approach was 0.47.

Multidimensional Scale of Perceived Social Support (MSPSS): Zimet et al. (32) developed MSPSS in 1988, and Turkish validity and reliability of the scale was performed by Eker and Akar (33). The Cronbach's alpha coefficient of the scale was determined as 0.78-0.92. MSPSS is a Likert-type scale with 12 items which is responded as "Definitely No" and "Definitely Yes" with 7 grades (1-7 points). The scale has 2 subscales with 4 items each to determine special personal support. The lowest and highest scores obtained from the subscales are 4 points and 28 points. The lowest and the highest scores which can be obtained by total scale points composed of summation of subscale points were 12 points and 84 points. If obtained score from the scale is high, it indicates that social support is high (34). In the present study general Cronbach's alpha reliability level of social support scale was determined as 0.88.

Statistical Analyses

Data obtained in the study were evaluated by using the Statistical Package Program (SPSS-16.0). Kolmogorov-Smirnov distribution test is used to

evaluate whether variables were distributed normally, in addition to descriptive statistical methods (frequency, percentage, mean, standard deviation). Data were compared by using Pearson Chi-square test and Kruskal Wallis test. The level of significance was defined at p<0.05.

Ethical Issues

The present study was approved by Local Ethics Committee of Cumhuriyet University Research and Practicing Hospital with date 10.01.2012 and number 2012-01/10. Additionally, permissions to perform the study were obtained from the Sivas Providence Health Care and Sivas Numune Hospital. As participation in the study was volunteering based, patients were informed orally and written about the study, and their signed consents were obtained.

RESULTS

Descriptive characteristics of patients are given in Table 1. Of patients, 58% were ≤40 years, slightly more than half were females and bachelor, and nearly half of them were graduated from the primary school and were not working. More than half of patients declared that their income and expenses were just equal. Nearly half of patients were taking medications for more than 10 years.

When patient drug compliance was evaluated according to MCS, it was determined that 44.7% had good compliance, 55.3% had drug incompliance.

When coping ways of patients with stress were evaluated, the effective coping way was determined that the mean points of self-esteemed and optimistic subscale approaches were at moderate level, whereas mean points of subscales of "desperate approach" and "submissive approach" which were ineffective ways to cope with stress, were below the moderate level. According to Social Support Scale of patients, the mean point of family support was the highest (23.25±6.06), and the mean point of friend support was the lowest (16.72±8.88).

As shown in the table, differences between groups

Table 1: Distribution of descriptive characteristics of patients

Descriptive characteristics	n	%
Age		
≤40 years	87	58.0
≥41 years	63	42.0
Mean age=40.6±12.9 years		
Gender		
Female	81	54.0
Male	69	46.0
Marital status		
Married	73	48.7
Bachelor	77	51.3
Education level		
Illiterate	14	9.3
Primary school	70	46.7
High school	32	21.3
University	34	22.7
Occupation*		
Not working	110	73.3
Working	40	26.7
Income state		
Income exceeds expenses	35	23.3
Incomemeets expenses	96	64.0
Income is less than expenses	19	12.7
Family type		
Nuclear family	101	67.3
Extended family	38	25.3
Divided family	11	7.3
Duration of drug use		
1 – 5 years	53	35.3
6 – 10 years	40	26.7
11 – 15 years	17	11.3
≥16 years	40	26.7
Conditions preventing regular use of drugs**		
Yes	50	33.3
No	100	66.7

*Of patients, 39.3% were hosewives, 10.7% were workers, 12.7% officials, 9.3% were self-employed, 12.7% were retired, 3.3% were students, and 12% had no occupation.
**Expressions of causes such as drug side effect, disbelief in drug effects, belief of non-recovery, no requirement for drug during wellness periods etc. are evaluated as "Yes".

were not statistically significant in subscales of ways of coping with stress, self-esteemed approach, optimistic approach, and seeking social support approach (p>0.05). The differences between groups were statistically significant in desperate and submissive approaches (p=0.040, p=0.050). Points of desperate and submissive approaches were higher in patients with drug incompliance. Family support, friend support, and special personal support which were subscales of social support were not statistically significant (p>0.05).

Table 2: Comparisons of ways of Ways of Coping with Stress Scale, and Social Support subscales' mean points between drug compliance groups

	Compliant		Incompliant			
	Mean	SD	Mean	SD	z	p
Ways of Coping with Stress Scale						
Self-esteemed approach	2.220	0.65	2.130	0.58	-1.423	0.162
Desperate approach	1.405	0.66	1.625	0.66	-2.056	0.040
Submissive approach	1.290	0.60	1.462	0.59	-1.958	0.049
Optimistic approach	2.155	0.56	2.020	0.55	-1.598	0.110
Seeking social support approach	1.850	0.69	1.750	0.56	-1.324	0.186
Social Support Scale						
Family support	23.970	6.03	22.660	6.06	-1.747	0.081
Friend support	16.290	9.19	17.060	8.64	-0.542	0.588
Special person support	20.320	8.42	18.690	8.55	-1.711	0.087

SD: Standart deviation

DISCUSSION

Drug compliance of bipolar patients was evaluated by MCS, and 55.3% of patients were determined as incompliant with drug treatment. Of the patients, 44.7% were completely compliant with drug treatment, whereas 39.3% were partially compliant, and 16% were completely incompliant. It was believed that this outcome was significant as it showed that more than half of patients were incompliant with drug treatment. Actually, healthcare system is treatment-based in our country. It is expected from patients to develop their treatment management and to maintain therapeutic regimens during their hospitalizations. However, results of the study are important because they have shown that there are problems in these services. In a previous study performed in our country, treatment compliance of 63 patients with bipolar disorder was evaluated by MARS scale, and treatment incompliance rate was determined as 63.5% (35). It may be stated that this result is supportive in favor of our results. However, Savas et al. (36) performed a retrospective file review study to evaluate drug compliance of patients with bipolar disorder, and they reported the incompliance rate as 26.5%. When the previous result was compared with our study result, it was observed that patients in the former study had better compliance levels. The differences in study results may originate from the fact that in our study we collected data about drug compliance during home-visits by face-to-face interview method.

Different results were reported in international studies performed to determine drug compliance among bipolar patients. Sajatovic et al. (37) evaluated patients with bipolar disorder by measuring serum lithium levels, and they reported that 54.1% of them were completely compliant, whereas 45.9% of them were partially compliant or incompliant. Keck et al. (38) evaluated drug compliances of patients during their one year follow-up study by information obtained from patients and healthcare providers of patients, and they reported that 51% were partially or completely incompliant. Copeland et al. (39) performed a study on 435 patients diagnosed with bipolar disorder, and they reported that 46% of patients had poor compliance. Sajatovic et al. (40) performed a study to determine drug compliance of patients with bipolar disorder, and they reported that 48.1% of them were partially or completely incompliant with antipsychotic treatment, whereas 51.9% were completely compliant. Colom et al. (41) evaluated drug compliance of 200 patients followed up with bipolar disorder diagnosis by performing compliance oriented interview, and reported that 40% of patients had partial or poor compliance. These results were similarly supportive for our study results. On the other hand, in some other studies, drug compliance rates of bipolar patients were better than our rates. Rosa et al. (42) reported in their study that 85.6% of their patients with bipolar disorder were compliant with lithium treatment. Gonzalez-Pinto et al. (43) started to follow up 1831 patients in the first 12 weeks of treatment and continued for 24

months, and they showed that 76.6% were treatment compliant, but 23.4% were treatment incompliant. Study results and the literature findings were different from each other, because methods to evaluate compliance were different, sample size contained patients with additional psychiatric diagnosis, sample size, follow-up duration for patient compliance, there were ethnically different groups, and differences between healthcare politics of the studies performed. The main objective in evaluating incompliance is to determine factors which predict incompliance, and to measure the degree of incompliance correctly (44,45).

Majority of patients deny their diseases, and they do not want to accept that they have an important mental illness and to use drugs for years. Besides, many of patients tend to show disease symptoms as mild ones. Some patients are satisfied with their manic conditions and they postpone or refuse to use drugs because they do not want them to be recovered (12). It has been reported that acceptance or denial of the disease has affected drug compliance at high levels. Drug compliance levels of patients with bipolar disorder who used negative denial coping method was related negatively to the denial level (45). In the present study it was determined that when correlation between drug compliance and ways to cope with stress were evaluated, as use of emotion-based passive coping way, such as desperate approach, and submissive approach was increased, so drug incompliance was increased. Greenhouse et al. (46) investigated correlations between disease denial/acceptance and drug compliance, and they reported that drug compliance rates were lower among patients who denied the disease. Lam et al. (47) reported that patients who coped with preliminary symptoms of mania by using behavioral methods, experienced fewer manic and depressive attacks. Differences in coping ways in bipolar patients affect drug compliance and related conditions. Patients with bipolar I disorder tend to use a wider range of coping abilities, whereas patients with bipolar II disorders prefer mainly denial, accusation, and problem oriented coping (48). It is known that many severe stressors as well as chronic stress with stressful life events cause depression attacks (24). Stress factors play a role in manic attacks, and recurrence rate is increased 4-5 folds in patients with high stress levels (12). This condition indicates that stress is an important factor to reveal disease symptoms.

In many studies, it was emphasized that attitudes of relatives or families to drug treatment living with the patient, were important (15,23,49,50). In our study, effects of social support to drug compliance was statistically insignificant. However, the lowest score means were in support of friend subscale in both groups, and this implied that friend support was insufficient. Low social support increases development of the disease, and decreases recovery chance (51). Sajatovic et al. (52) reported that supportive social networks, and problems in access to treatment might affect the compliance, and it was determined in the study that there were individuals against drug treatment in nearly 1/3 of nuclear social network of patients. Oral et al. (16) performed a study on bipolar patients, and reported that there were significantly more individuals in social networks of patients who could comply with treatment than the ones who could not. In a study performed on 170 participants investigating about correlation between social support and recovery in people with severe mental diseases, recovery points were higher in patients with higher size of general network, and higher network satisfaction (53). It was reported that clinical progression of depression was better in individuals with high social support level (54).

In a study, monthly correlation between social support and compliance were determined significant at 4th and 7th time-points during the 6 months' study period. During the study, a significant correlation was determined between monthly compliance percentage and means of familial support levels. No significant correlation was determined between social support and general compliance in all of the study period (55). Kelleci and Ata (56) investigated correlation between drug compliance and social support in psychiatry patients, and they reported statistically significant, positively directed weak correlation between friend support and drug compliance (57). Scheurer et al. (57) conducted a study investigating correlations between

treatment compliance and social support in chronic diseases, and they reported that there was a correlation between social support and high treatment compliance rates, whereas there was a lesser correlation between emotional support and adherence.

In the literature, it is recommended that at least two measurements should be used in combination to determine compliance, because each method has strong and weak aspects (59). During study planning, Morisky Compliance Scale, Self-report, and Drug Count Method were decided to be used to determine drug compliance. However, if patients bought their drugs form pharmacies, started to use them and they could not remember the time they had opened the package, and they did not record, drug counting method was not used. Drug compliances of patients were evaluated according to self-report. This condition is the most important limitation of the study. However, it is also believed that as evaluations have been performed at home environment, correct information has been gathered. Besides, disease levels could not be defined at home environment. Patients who were treated at the hospital and discharged were included in the study. This point may be considered as another limitation of the study.

In the present study, it was determined that slightly more than half of patients were incompliant with drug treatment, and incompliant patients preferred desperate and submissive approaches more commonly to cope with stress. Drug compliance rates are still far below the expected levels in bipolar patients. It is important that factors causing incompliance should be determined and intervened to increased drug compliance rates in patients. Therefore, qualitative studies with large sample sizes should be performed to define factors causing incompliance.

In conclusion, it is determined that patients preferring passive coping ways have lower drug compliance rates. Therefore, it is recommended that training sessions should be performed to determine ways to cope with stress, and to help patients using active-solution centered methods in coping with stress. The study indicates that friend support is lower, so it is recommended to determine strategies to increase friend support in these patients.

Contribution Categories	Name of Author
Development of study idea	M.K.
Methodological design of the study	M.K.
Data acquisition and process	A.A.
Data analysis and interpretation	A.A., M.K.
Literature review	A.A.
Manuscript writing	A.A.
Manuscript review and revisation	M.K.

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