

Original article / Araştırma**Are treatment adherence and insight related to quality of life in patients with schizophrenia and bipolar disorder in remission?**Aysun DEMİR ÖZDEMİR,¹ Leyan İNANÇ,² Merih ALTINTAŞ,³
Hüseyin GÜLEÇ,³ Ümit Başar SEMİZ²**ABSTRACT**

Objectives: The aim of this study is to investigate the association of treatment adherence, quality of life and insight among bipolar disorder and schizophrenia patients who are in remission and to reveal which variables predict the treatment adherence. **Methods:** We conducted a cross sectional study with 150 schizophrenia and 150 bipolar disorder patients in remission. The patients were administered Mini International Neuropsychiatric Interview (MINI), Brief Psychiatric Rating Scale (BPRS), the Schedule for Assessing the Three Components of Insight (SAI), World Health Organization Questionnaire on Quality of Life: Short Form (WHOQOL-BREF), Medication Adherence Rating Scale (MARS). We compared WHOQOL-BREF scores of the bipolar and schizophrenia patients. We checked the correlation between SAI scores and BPRS scores as well as between SAI scores and WHOQOL-BREF scores for both groups. We set MARS results (adherent vs. non-adherent) as a dependent variable and conducted logistic regression with all the clinical variables available to find a predictor for treatment adherence. **Results:** WHOQOL-BREF scores were found to be similar and positively correlated with insight for both groups. BPRS scores were found to be negatively correlated with insight for both groups. SAI treatment acceptance was found to be the only predictor of treatment adherence independent of the other clinical variables. **Discussion:** A strong positive relationship between insight and treatment adherence suggests that treatment adherence of patients with good insight is better. The positive relationship between insight and quality of life shows that insight is an important factor in terms of quality of life and reveals the importance of insight oriented therapies. (*Anatolian Journal of Psychiatry* 2018; 19(5):443-450)

Keywords: bipolar disorder type I, insight, treatment adherence, schizophrenia, quality of life

Remisyondaki şizofreni ve bipolar bozukluk hastalarında tedavi uyumu ve iç görü, yaşam kalitesi ile ilişkili midir?**ÖZ**

Amaç: Bu çalışmanın amacı, remisyon dönemindeki şizofreni ve bipolar I bozukluk hastalarında tedavi uyumunun, iç görü ve yaşam kalitesi ile ilişkisini açıklamak ve bu değişkenlerin tedavi uyumunu hangi ölçüde yordadığını ortaya koymaktır. **Yöntem:** Remisyondaki 150 şizofreni ve 150 bipolar bozukluk hastasıyla kesitsel bir çalışma yapıldı. Hastalara İçgörünün Üç Bileşenini Değerlendirme Ölçeği, Mini Uluslararası Psikiyatrik Görüşme (MINI), Kısa Psikiyatrik Değerlendirme Ölçeği (KPDÖ), Dünya Sağlık Örgütü Yaşam Kalitesi Ölçeği Kısa Formu Türkçe Versiyonu, MARS Tıbbi Tedaviye Uyum Oranı Ölçeği uygulandı. Bipolar ve şizofreni hastalarının yaşam kalitesi puanlarını karşılaştırdık. İçgörünün Üç Bileşenini Değerlendirme Ölçeği puanları ile KPDÖ puanları arasındaki korelasyonun yanı sıra iç görü puanları ile yaşam kalitesi skorları arasındaki korelasyonu kontrol ettik. Bağımlı bir değişken olarak

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MARS sonuçlarını değerlendirerek, tedavi uyumu için bir öngördürücü olup olmadığını araştırmak amacıyla, tüm klinik değişkenleri içerecek şekilde lojistik regresyon uyguladık. **Bulgular:** Yaşam kalitesi ölçeği puanlarının iki grup için de benzer ve iç görü ile pozitif korele olduğu bulundu. KPDÖ puanlarının her iki grup için de iç görüyle negatif korele olduğu bulundu. İçgörünün Üç Bileşenini Değerlendirme Ölçeği tedavi kabulü alt ölçeği, diğer klinik değişkenlerden bağımsız olarak tedaviye uyumun tek göstergesi olarak bulunmuştur. **Tartışma:** İç görü ve tedavi uyumu arasında güçlü pozitif ilişki, iç görüsü iyi olan hastaların tedaviye uyumlarının daha iyi olduğunu düşündürmektedir. İç görü ve yaşam kalitesi arasındaki pozitif ilişki iç görünün yaşam kalitesi açısından önemli bir etken olduğunu göstermekte ve iç görü kazandırmaya yönelik terapilerin önemini ortaya koymaktadır. (*Anadolu Psikiyatri Derg* 2018; 19(5):443-450)

Anahtar sözcükler: Tedavi uyumu, şizofreni, bipolar I bozukluk, iç görü, yaşam kalitesi

INTRODUCTION

Insight is a three dimensional concept comprising of awareness of mental illness, relabeling of psychotic symptoms and acceptance of treatment.¹ Most of the patients diagnosed with schizophrenia are lacking awareness of their mental disorder, their symptoms, social functioning impairments and the need for medical assistance.² Adherence to therapeutic interventions, for a problem they do not believe in, is almost impossible for patients without insight.³ Lack of insight is common for both schizophrenia and bipolar disorder patients.⁴ Poor treatment adherence causes increased exacerbation of psychotic symptoms, poor prognosis, increased hospitalization and higher health care costs.⁵ Patients' therapeutic relationship with the clinician is important in acquiring the insight and improving treatment adherence.⁶

Mood disorders are cyclical and periodic disorders with recurrences and remissions and disturb the social functioning of the person.⁷ Lack of insight is not just a property of psychosis. Poor treatment adherence and poor outcome were associated with poor insight in bipolar patients.⁸ In recent years it has become more and more important to assess the well-being of patients in different domains such as social, physical and occupational functioning. Improving Quality of life is one of the treatment goals in patients with bipolar disorder.⁹ Quality of life targets to determine individual's social status according to his/her sociocultural situation; to identify his/her expectations in the society and to adapt to the social environment.¹⁰ Non-adherence to the recommended treatment leads to serious consequences for bipolar disorder. Lack of treatment adherence in bipolar disorder is considered to be the main cause of the recurrence of the disease.¹¹ It has been reported that in patients with poor treatment compliance risks of a lower quality of life, increased rates of relapse, and suicide attempts are greater.¹²

The aim of this study is to investigate the relationship between treatment compliance and insight, quality of life, and other clinical variables in patients with schizophrenia and bipolar type I disorder during the remission period, and to determine which variables predominantly predict treatment compliance.

METHODS

Participants

One hundred and fifty schizophrenia patients and 150 bipolar disorder type I patients who were diagnosed according to DSM-5 criteria, and who signed the informed consent form, were selected and included in the study consecutively. Those who were younger than 18 years or older than 65 years, those with mental retardation, mental disorder that was due to a general medical condition or heavy neurological disorder and substance abuse history in the last 3 months, which would prevent them from participating, were excluded from the study. The local ethics committee approved the research.

Measurements

Demographic characteristics: In this form applied on the first visit, age, gender, marital status, level of education, place of residence, medications used, accompanying medical illness story, clinical variables about diagnosis and treatment were evaluated.

MINI International Neuropsychiatric Interview (MINI): MINI was designed as a short and structured interview for the basic Axis I Psychiatric Disorders in DSM-IV and ICD-10. The validity and reliability studies of MINI compared to SCID-P and CIDI (a structured interview developed by the World Health Organization for the use of amateurs for DSM-III-R and ICD-10) have been conducted.¹³ The results of these studies have shown that the MINI has high validity and reliability scores at acceptable levels and can be implemented in as little as 15 minutes.

The Brief Psychiatric Rating Scale (BPRS): BPRS was developed by Overall and Gorham.¹⁴ It is a semi-structured introductory interview filled in by the interviewer. It consists of 18 items. Each item is evaluated with scoring between 0-6. Scores between 15 and 30 refer to the minor syndrome, scores above 30 refer to the major syndrome.

Schedule for the Assessment of Insight (SAI): A semi-structured, clinician-administered scale consisting of 8 questions developed by David in 1990.¹ The SAI was developed for the assessment of insight in psychotic patients and it is based on the concept of insight, measuring three distinct dimensions: 1) recognition of mental illness; 2) ability to relabel unusual mental events as pathological; and 3) treatment compliance, both expressed and observed. Higher SAI scores indicate greater insight. The Turkish validity and reliability study of this scale was carried out by Arslan et al.¹⁵

WHOQOL-BREF-TR: The WHOQOL-BREF-TR consists of 27 questions that are formed by adding a national question during Turkish validity studies. Scale provides a profile of scores on four dimensions of quality of life: physical health, psychological, social relationships, and the environment. The scale is for self-evaluation. Higher scores reflect a better quality of life. Turkish validity and reliability study was conducted by Eser et al.¹⁶

Medication Adherence Rating Scale (MARS): MARS was created by Thompson et al.¹⁷ for the assessment of adherence in psychiatric patients. Turkish validity and reliability study of this scale was carried out by Koç.¹⁸ The scale includes 10 yes or no items. The scores ≥ 6 are interpreted as high and the scores < 6 are low.

Statistical analysis

The distribution of the data was first evaluated with the Kolmogorov-Smirnov methods. The t-test was used to compare numerical variables and the X² test was used to compare categorical variables. Correlation analysis was performed using Pearson Correlation test. Logistic regression analysis was used to determine the psychometric variables that predicted the treatment. Significance was assessed as $p < 0.05$ in 95% confidence interval.

RESULTS

Of the 150 schizophrenia patients 40% are female while among 150 bipolar patients 58.7% are female. The difference was found to be significant (Table 1). The mean age of bipolar group and schizophrenia group respectively was 39.09 ± 10.04 and 39.87 ± 9.66 . The difference was not significant ($t=0.686$, $p=0.493$).

The number of patients living alone and those who were in care homes or were living with their

Table 1. Comparison of groups' demographic variables

	Bipolar (n=150)		Schizophrenia (n=150)		t ^a , χ^2 ^b	p
	n	%	n	%		
Age (Mean \pm SD)	39.09 \pm 10.04		39.87 \pm 9.66		0.69 ^a	0.493
Gender						0.001
Female	88	58.7	60	40.0	9.72 ^b	
Male	62	41.3	90	60.0		
Occupation						0.295
Has an occupation	80	53.3	89	59.3	1.10 ^b	
No occupation	70	46.7	61	40.7		
Marital status						
Married	58	38.7	23	15.3	0.03 ^b	<0.001
Job						0.547
Unemployed	56	37.3	51	34.0	0.36 ^b	
Occasional employment	94	62.7	99	66.0		
Living arrangements						1.000
Alone	21	14.0	22	14.7	0.03 ^b	
With family	129	86.0	128	85.3		
Economic status						0.047
Middle class or above	147	98.0	140	93.3	3.94 ^b	
Lower class	3	2.0	10	6.7		

a: Student's t test; b: chi-square test

families was found to be similar for both groups (14.7% and 85.3% vs. 14% and 86%). Bipolar patients were found to be better off with significantly higher number of high and middle class patients (98% vs. 93.3%). There were also significantly more bipolar patients who were married (Table 1).

The number of hospitalizations in the bipolar group was found to be significantly higher than that of the schizophrenia group ($t=-2.88$, $p=0.005$). But there was no significant difference for treatment compliance and drug adherence

($\chi^2=0.103$, $p=0.749$; $\chi^2=2.20$; $p=0.138$) (Table 2).

The illness duration was significantly greater for schizophrenia patients (Table 2). No statistically significant difference was found between the two groups of patients' MARS scores (Table 2).

There was no statistically significant difference between the quality of life scores for any of the subscales of the schizophrenia and bipolar disorder patients (Table 3). There was no significant difference between BPRS mean scores of patients with schizophrenia and bipolar disorder ($p=0.182$) (Table 3).

Table 2. Comparison of schizophrenia and bipolar disorder patients in terms of various disease Variables in the last year

Variables related to the course of the disease	Bipolar (n=150)		Schizophrenia (n=150)		t ^a , χ^2 ^b	p
	n	%	n	%		
Duration of illness (years)	13.55±7.75		16.15±8.14		2.83 ^a	0.005
Average number of hospitalizations	3.47±2.95		2.43±1.75		-2.88 ^a	0.005
Irregular drug adherence in the last 12-month	24	16.0	22	14.7	0.10 ^b	0.749
Irregular outpatient treatment compliance in the last 12-months	26	17.3	17	11.3	2.20 ^b	0.138
MARS						0.410
Compliant	131	87.3	126	84	0.69 ^b	
Non-compliant	19	12.7	24	16		

a: Student's t test; b: chi-square test

Table 3. Comparison of quality of life and BPRS scores of patients with schizophrenia and bipolar disorder WHOQOL-BREF

	Bipolar (n=150)		Schizophrenia (n=150)		t, χ^2	p
	Ort.±SD	Ort.±SD	Ort.±SD	Ort.±SD		
Physical health	25.01±3.62	25.03±3.03	25.03±3.03	25.03±3.03	0.01	0.959
Psychological	20.22±3.02	20.41±3.02	20.41±3.02	20.41±3.02	0.02	0.579
Social Relationships	9.74±1.64	9.72±1.77	9.72±1.77	9.72±1.77	0.46	0.919
Environment	23.39±3.45	23.37±3.33	23.37±3.33	23.37±3.33	0.39	0.973
BPRS	7.24±3.60	7.81±3.84	7.81±3.84	7.81±3.84	21.81	0.182

WHOQOL-BREF and BPRS scores were correlated with SAI scores (Table 4). For both groups BPRS scores are significantly correlated with SAI subscale scores in the negative direction. While a highly significant correlation is observed between WHOQOL-BREF Physical Health and SAI accepting treatment in schizophrenia patients, no such correlation is found for bipolar patients. WHOQOL-BREF Psychological, Social Relationships and Environment scores are

highly correlated across all SAI subscale scores for bipolar patients while for schizophrenia patients there have been significant correlation only for SAI symptom relabeling, and between environment and total insight and social relationships and accepting treatment.

Logistic regression analysis was established to determine which clinical variable(s) and which component of the insight (including the scores of

Table 4. Correlation of clinical variables and insight scores in schizophrenia and bipolar patients

	Symptom relabeling	Accepting illness insight	Accepting treatment insight	Total insight
Schizophrenia				
BPRS	-0.404**	-0.450**	-0.477**	-0.507**
WHOQOL-BREF				
Physical health	0.240*	0.176*	0.224**	0.236**
Psychological	0.169*	0.094	0.115	0.141
Social				
Relationships	0.214**	0.121	0.178*	0.186
Environment	0.235*	0.101	0.140	0.175*
Bipolar disorder				
BPRS	-0.390**	-0.209*	-0.202*	-0.297**
WHOQOL-BREF				
Physical health	0.289**	0.225**	0.095	0.226**
Psychological	0.395**	0.354**	0.257**	0.370**
Social				
Relationships	0.318**	0.315**	0.213**	0.311**
Environment	0.381**	0.377**	0.227**	0.380**

* $p < 0.05$; ** $p < 0.005$

Table 5. Psychometric variables predicting treatment compliance, including SAI subscales (df=1)

	Odds Ratio	p	Wald	B
Diagnosis	0.823	0.657	0.197	-0.195
Age	0.973	0.431	0.621	-0.027
Gender	0.744	0.459	0.549	-0.296
Drug abuse	2.480	0.269	1.223	0.908
Illness duration	1.014	0.755	0.098	0.013
Number of hospitalizations	1.143	0.103	2.659	0.134
BPRS	0.944	0.345	0.894	-0.058
SAI Total	1.303	0.470	0.521	0.264
SAI treatment acceptance	0.324	0.010	6.667	-1.128
SAI illness acceptance	0.607	0.240	1.378	-0.500
SAI symptom relabeling	0.849	0.721	0.128	-0.163

treatment acceptance, illness acceptance and symptom relabeling subscales of SAI) was more predictive of treatment compliance. As a result of this logistic regression analysis we found that the treatment acceptance subscale of the SAI predicts treatment adherence (Table 5).

DISCUSSION

Studies on insight and treatment compliance focus more on demographic data. The studies in the literature that investigate the relationship between quality of life, insight and treatment adherence have different research designs, which makes it difficult to compare the results. There are only a few studies that examine these vari-

ables individually or in pairs among patients who are in remission.^{19,20}

The results of our logistic regression analysis showed that the treatment acceptance subscale of the SAI was predictive of treatment adherence. There are studies in the literature showing treatment adherence positively correlated with insight in support of our hypothesis.^{21,22}

Both the schizophrenia and bipolar patients showed a significant negative correlation between their BPRS total scores and their insight subscale scores (Table 4). The BPRS total score is used to approximate disease severity and thus it indicates a possible link between illness severity and insight. Since the BPRS scale also in-

cludes symptoms such as delusions and hallucinations, a negative correlation is expected with the symptom relabeling subscale of the insight. Similarly acceptance of treatment by the patients and accepting the illness will decrease the BPRS scores. It seems that our assumption that those patients with better insight are showing milder psychopathology is corroborated by other studies showing relationship between insight and the severity of the psychopathology.²³ It may be the case that insight is affecting the severity of the psychopathology indirectly via positively affecting the treatment adherence. This also supports the conclusion in our study that insight is predictive of treatment adherence. Of course the opposite may also be true that a milder psychopathology brings a better insight as the direction of the cause and effect relationship cannot be deduced from the available data.

There was a significant positive correlation between quality of life and insight in patients with schizophrenia and bipolar disorder in our study. There are studies in the literature that show that insight and quality of life are related. Insight and quality of life were found to be positively correlated in a study corroborating our results with schizophrenia patients.²⁴ Yet in another study on schizophrenia and bipolar patients, the physical subscale of insight and quality of life was found to be negatively associated.¹⁹ In our study, we found a positive correlation between bipolar disorder and schizophrenia patients' insight and physical subscale of life quality. This result is opposite of what Yen et al. found in.¹⁹ The reason of the discrepancy may be cultural as Yen's study was conducted in Taiwan and our study in Turkey. Yen's study has less than 200 schizophrenia and bipolar disorder patients while our study is a bit stronger with 300 patients totally. It is possible that these patients cope with their disease using avoidance and thus insight into their condition causes unpleasant thoughts and suffering. It is also possible that Turkish patients receive more social support. More than 80% of the patients in our study live in with their families (Table 1).

Remission bipolar disorder patients and schizophrenia patients were similar in terms of quality of life (Table 4). This result seems to be consistent with the results in the literature.^{19,25-27} Yet the bipolar patients are obviously the higher functioning group as they display significantly higher incomes and significantly higher marriage rates (Table 1).

There are also some prominent differences

between the schizophrenia patients and bipolar disorder patients that are of interest. One is the highly significant correlation between physical domain of WHOQOL-BREF and SAI accepting treatment insight for schizophrenia patients, which notably does not exist for bipolar disorder patients (Table 5). This may have to do with the health damaging aspects of the untreated schizophrenia. It is possible that bipolar disorder when left untreated does not harm the physical health to the degree schizophrenia does.

Another notable difference between the two groups of patients is that social relationship and environment domains of WHOQOL-BREF are much better correlated with insight in bipolar disorder patients (Table 5). Difficulty in social relationships in schizophrenia can be attributed to the manifestation of the negative symptoms of the disease. This may also be the cause of the lower reported income of this patient group. Lower income in turn leads to poorer living conditions and is expected to cause lower environment domain scores in WHOQOL-BREF. Instead, we observe comparable scores in both social and environment domain for both of the groups (Table 4). Since we have not controlled for the negative symptoms among schizophrenia patients an unknown number of them will suffer the deficit syndrome, which in turn will affect the strength of the correlation observed. This is also supported by our demo-graphics data that reports more marriages and higher income for the bipolar disorder patients (Table 1).

Logistic regression analysis results were used to determine whether the insight had predictive value for treatment compliance regardless of diagnosis, demographic characteristics, and disease severity. Only the treatment acceptance subscale of SAI was found to be predictive of treatment compliance (Table 5).

Similar to our results, there are studies that find that insight is not related to sociodemographic characteristics,²⁸ as there is a study that shows that treatment adherence and demographic data are related in the literature.²⁹

When our study findings are evaluated together, patients with better insight into their illness were found to have better drug compliance, less mental psychopathology and better quality of life. Our hypothesis is confirmed that the treatment adherence in schizophrenia and bipolar disorder patients is directly related to the level of insight independent of other demographic and clinical.

scales. Insight and quality of life scales are self-reporting scales. The fact that patients participating in this study agree to fill in these scales suggests that our sample consists of patients who are more compatible than the patients refusing to participate. Thus, the assessment is

subjective. The patient may be inconsistent with the evaluation of his/her relatives. We think that the inclusion of scales in the evaluation of patients as well as their relatives may be beneficial in a future study.

Authors' contributions: A.D.Ö.: data collection; L.İ.: writing manuscript, analysis; H.G.: analysis, editing assistance; Ü.B.S.: study conception and design, technical assistance.

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