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Investigating the level of medication adherence and subjective recovery in patients diagnosed with schizophrenia

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ABSTRACT

Background & Aim: Low compliance with medication in patients with schizophrenia may negatively affect the quality of life and subjective recovery. The objective was to analyze the association between medical adherence and subjective recovery in individuals diagnosed with schizophrenia.
Methods & Materials: This descriptive and correlational research was conducted between July and August 2023. 120 patients registered with a Schizophrenia Relatives Association in Türkiye were included in the study using simple random sampling. Demographic questionnaire, Medication Adherence Report Scale, and Subjective Recovery Assessment Scale were used in the study. Percentage, mean, t-test in independent groups, one-way ANOVA, and Pearson correlation coefficient were used to data analysis in SPSS 25.
Results: Medication Adherence and Subjective Recovery mean scores were 22.85±3.57 and 61.82±15.37 respectively. It was revealed that there is a positive and statistically significant relationship between Medication Adherence and Subjective Recovery scores ($r=0.269$, $p<0.01$). As well as between age and Medication Adherence Report Scale ($r=0.215$, $p<0.05$). The subjective recovery level was significantly lower in smokers compared to non-smokers ($p<0.05$).
Conclusion: Subjective recovery levels of psychiatric patients can be increased by monitoring their medication adherence levels. Supportive interventions (giving motivational talks for medication use, following up with patients by phone or home visit, etc.) should be implemented for those who do not adhere to their medication regimen.

Introduction

Treatment adherence is defined as the patient's consent to receive and apply health-related recommendations. On the contrary, treatment non-compliance can pose a multidimensional problem such as not using prescription drugs or using them irregularly, and missing appointments (1). Medication adherence can be defined as using the prescribed medications correctly in terms of timing and dosage, as treatment will only be effective if the patient adheres to the rules of medication usage set by the doctor (2). It is estimated that 41.2% to 49.5% of schizophrenia patients do not exhibit full adherence to medication treatment, and only one-third of patients are believed to fully adhere to the treatment (3). Non-adherence to psychiatric treatment regimens has a negative impact on disease course, relapse, recovery, and cost of health care (4). Risk factors for medication adherence problems include the side effects of psychiatric medications, negative attitudes towards medication, distrust in medication, a history of voluntarily discontinuing medication, psychiatric symptoms, memory issues, substance or alcohol abuse accompanying the illness, the patient's lack of insight and inadequate social support (6,7). Increasing adherence to medication in patients with schizophrenia will help reduce the morbidity and suffering of patients and families, as well as reduce the cost of re-hospitalization (6). Adherence is associated with recovery, defined as a process associated with

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both symptom relief and functioning, as well as the development of individualized coping mechanisms and improvements in levels of psychological well-being (7).

Subjective recovery has been defined by some authors as the process of gaining control over symptoms, moving toward health, hope, and purposeful, and meaningful living. There is also an acceptance that subjective recovery can be achieved regardless of the presence or absence of symptoms (8). The concept of subjective recovery in schizophrenia patients is defined as having a personally meaningful and satisfying life, achieving one's own life goals and being able to make care decisions, having hope for the future, being at peace with oneself, and having valuable emotions such as integrity, well-being and self-respect (9). There is a positive relationship between patients' medication adherence and personal recovery (7). Subjective recovery is considered an effective factor in maintaining social relationships (10). When the concept of recovery is examined more closely; It includes factors such as being able to benefit from social resources, establishing satisfactory interpersonal relationships, taking responsibility, accepting the disease, managing the disease, having hope, and self-confidence (11). Clinical recovery and subjective recovery are not synonymous but complementary concepts, and subjective recovery affects the patient's quality of life at least as much as clinical recovery (12).

In a study, it was determined that having a positive impression of medication was associated with schizophrenia recovery (13). In another study conducted with schizophrenia patients, it was determined that there was a positive relationship between medication adherence and recovery (7). It is known that compliance with the treatment of patients diagnosed with schizophrenia increases social functionality and social integration. To improve treatment outcomes for schizophrenia and reduce the suffering of patients and their families, the issue of noncompliance with treatment must be addressed immediately. The non-compliance rate is estimated to be around 50% in the first year and 75% in the second year (14). Therefore, it is important to identify factors associated with nonadherence and the causes of nonadherence to identify patients at risk of nonadherence and plan appropriate strategies to improve their treatment adherence. On the other hand, comprehensive evaluation of subjective recovery levels in schizophrenia patients using specific rating scales has not been adequately researched and addressed. It is thought that compliance with treatment may also be related to subjective recovery. This study aimed to evaluate the medication adherence and subjective recovery levels of schizophrenia patients and the relationship between treatment compliance and subjective recovery. Determining the level of adherence of patients with medication will also provide guidance in planning the training to be given to patients.

Methods

This descriptive-correlational research was conducted between July and August 2023 at a Schizophrenia Relatives Association in Türkiye. This association provides services to both patients and their families. Regular group meetings with patients are held at the association to enhance their social functionality. The population of this study consists of patients diagnosed with schizophrenia who applied to this center and meet the inclusion criteria for the research. Simple random sampling was used as the sampling method.

Inclusion Criteria in the study were being ≥18 years of age, being diagnosed with schizophrenia, being able to answer the questions, not having an underlying disease, and agreeing to participate in the study. The exclusion criteria were having communication problems and hearing impairment, refusing to participate in the study, and filling in the questionnaires incompletely or incorrectly. The sample size was calculated using G*Power version 3.1 (15). When using the G*Power statistical analysis program with a 95% confidence interval, effect size of 0.78, alpha of 0.05, and power of 0.80, the sample size was determined to be 74. However, we reached 120 people in case the surveys were filled out incompletely.

In the research, a *Demographic questionnaire, Medication Adherence Report Scale,* and *Subjective Recovery Assessment Scale* were used.

Demographic questionnaire: Researchers made a socio-demographic characteristics questionnaire that includes age, occupation, education, marital status, gender, smoking, duration of the illness, and having a child.

Medication Adherence Report Scale (MARS): The original form, known as the Medication Adherence Report Scale (MARS-5), was developed by Chan et al (2002) to identify patients with medication non-adherence (16). It consists of five items and uses a 5-point Likert-type scale ("Never" with a score of 1 to "Always" with a score of 5), functioning as a self-report scale. The scale does not have a cutoff point. As the total score obtained from the scale increases, it can be said that adherence increases. The Turkish-adapted version of the scale has demonstrated a single-factor structure that explains 54% of the variance. The Cronbach's alpha coefficient for the Turkish form was found to be 0.78. The scale also showed a significant and strong correlation with the Morisky Adherence Scale, which measures the same construct (17). In this study, the Cronbach alpha value of the scale is 0.83.

Subjective Recovery Assessment Scale (SubRAS): It is a 17-item Likert-type self-report scale developed by Yıldız et al (18). Each item is scored from 1 to 5. Higher scores on the scale indicate that the individual perceives himself as more improved (18). The Cronbach's Alpha value of the scale in the current study was found to be 0.987 (18), and the test reliability for this study was evaluated with Cronbach's Alpha and the alpha value was found to be 0.93.

Research data were collected from the patients who came to the association by face-to-face survey method. Written and verbal information was given to the participants before the application, and scales were distributed to those who agreed to participate in the study and they were asked to fill out the questionnaires.

The data were analyzed using SPSS 25 (Statistical Package for Social Sciences) software. Kolmogorov Smirnov test was performed to determine whether the data showed normal distribution and it was understood that the data met parametric test conditions. The variables are summarized as frequencies, means, and percentages. Student t-test, one-way ANOVA, and Tukey test were employed to test whether medical adherence and subjective recovery differed in terms of demographic variables. Pearson correlation analyses were used to evaluate relationships between variables.

Approval for the study was received by the Clinical Research Ethics Committee of a university (Date: 16.06.2023, Number: 203/183). Participants were given detailed information about the study and consent was obtained.

Results

64.2% of the participants are male, 69.2% are single, and 40.8% are primary school graduates. 55.8% of the individuals indicated that their economic status is equal to their expenses. 64.2% of the participants smoke. 94 (78.3) individuals are not employed, and 38.3% of the participants have children. The mean age of the individuals is 42.09±10.78 years, and the duration of illness is 15.20±8.98 years (Table 1).

According to the research, the average MARS score of schizophrenia patients is 22.85±3.57. The participants' average SubRAS score is 61.82±15.37 (Table 2).

Table 3 shows the distribution of patients' medication adherence and subjective recovery levels in terms of certain variables. The subjective recovery level was significantly lower in smokers compared to non-smokers ($p<0.05$).

Table 4 lists the factors that predict subjective improvement. The predictive power of the linear regression model calculated using the Enter method was 26%. Factors that predict subjective recovery are educational level, smoking, and, medication adherence.

Table 1. Socio-demographic characteristics of the participants (n=120)

Socio-demographic characteristics	n	%
Gender		
Female	43	35.8
Male	77	64.2
Marital status		
Married	37	30.8
Single	83	69.2
Education level		
Elementary school or below	49	40.8
High school graduate	46	38.4
Bachelor's degree and above	25	20.8
Income status		
Income less than expenses	33	27.5
Income equal to expenses	67	55.8
Income greater than expenses	20	16.7
Employment status		
Employed	26	21.7
Unemployed	94	78.3
Having a child		
Yes	46	38.3
No	74	61.7
Smoking		
Yes	77	64.2
No	43	35.8
	Mean	**SD**
The mean age of the individuals	42.09	10.78
Duration of illness	15.20	8.98

Table 2. Mean scores of participants on Medication Adherence Report Scale and Subjective Recovery Assessment Scale (n=120)

Scales	Mean ± SD
Medication Adherence Report Scale	22.85±3.57
Subjective Recovery Assessment Scale	61.82±15.37

Table 3. Comparison of medication adherence report scale and subjective recovery assessment scale scores according to participants' socio-demographic characteristics

Characteristics	Medication adherence report scale			Subjective recovery assessment scale		
	Mean ± SD	t / F	p	Mean± SD	t / F	p
Gender						
Female	22.18±3.89	-1.531	0.129	64.20±15.75	-1.465	0.206
Male	23.22±3.34			60.49±15.09		
Marital status						
Married	22.94±3.04	0.196	0.845	61.97±16.50	0.070	0.944
Single	22.80±3.79			61.75±14.94		
Education level						
Elementary school or below	23.67±2.31	2.342	0.101	58.08±15.71	2.603	0.078
High school graduate	22.41±4.28			63.86±15.34		
Bachelor's degree	22.04±3.96			65.40±13.68		
Income status						
Income less than expenses	22.30±4.57	1.177	0.312	58.36±16.81	2.098	0.127
Income equal to expenses	22.82±3.45			61.92±14.91		
Income greater than expenses	23.85±1.22			67.20±13.43		
Having a child						
Yes	23.02±3.12	0.414	0.680	63.30±15.09	0.830	0.408
No	22.74±3.83			60.90±15.57		
Working status						
Employed	23.03±2.56	0.303	0.762	66.61±16.14	1.812	0.073
Unemployed	22.79±3.81			60.50±14.97		
Smoking						
Yes	22.84±3.41	-0.024	0.981	59.24±15.65	-2.512	0.013
No	22.86±3.87			66.44±13.87		

Table 4. Predictors factors of subjective recovery

Coefficients						
Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	28.728	15.012		1.914	.058
	Age	-.138	.165	-.097	-.833	.407
	Gender	-1.961	2.984	-.061	-.657	.512
	Educational level	4.837	1.886	.240	2.565	.012
	Income level	.854	2.104	.037	.406	.686
	Marital status	5.164	4.261	.156	1.212	.228
	Working status	-3.954	3.384	-.109	-1.168	.245
	Smoking	8.468	2.853	.265	2.969	.004
	Disease duration	-.142	.183	-.083	-.773	.441
	Having a child	-7.442	4.070	-.236	-1.828	.070
	Medication adherence report scale	1.438	.377	.334	3.817	.000

Discussion

This study aimed to determine the medication adherence and subjective recovery levels of individuals diagnosed with schizophrenia, the factors affecting the medication adherence and subjective recovery level, and the relationship between medication adherence and subjective recovery. Our results show that the patient's adherence to the medication is high. Abdisa et al. conducted a study with psychiatric patients and found that 60.7% of patients adhered to psychiatric medication treatment (4). Tan et al. found the MARS score to be 8.42±1.40 in schizophrenia patients (19). Settem et al. determined that 38.9% of schizophrenia patients did not adhere to medication (6). Wang et al. determined that only 28.5% of patients affected by episodic schizophrenia showed good adherence to antipsychotic medications (20). In another study, it was determined that 73% of schizophrenia patients were adherent to antipsychotic medications (21). Ghosh et al. determined that 88.16% of schizophrenia patients were non-adherent to medication (22). The level of compliance with medication in schizophrenia patients may also be related to the patient's insight, whether he or she has received training about the medication, or the caregiver's monitoring of the medication. Differences in research results may also be related to the individual characteristics of the patients (education level, adaptation to the disease, etc. of the group from which the sample was taken). It has been reported that medication adherence is important for the patient to control symptoms and prevent relapse, and interventions aimed at improving medication adherence can help reduce relapse (23). It is considered necessary to follow up individuals who do not adhere to medication through phone calls or home visits. Providing education to individuals showing medication non-adherence by psychiatric clinic nurses could be beneficial in this regard.

In the literature, being younger in age has been defined as a strong indicator of non-adherence to treatment (24). This study also confirms this finding. In the study, a statistically significant positive relationship was found between age and medication adherence. Abdulkareem et al. also found that medication adherence in schizophrenia patients under the age of 25 was worse compared to patients aged 25 and above (21). There are also studies in the literature that indicate no significant relationship between age and medication adherence (25). Settem et al. did not find a statistically significant relationship between age and medication adherence (6). Furthermore, Wang et al. identified that being older is a disadvantage for medication adherence, suggesting that advanced age could be a factor for poor medication adherence (20). In our study, unlike these studies, compliance with medication increases with age. This result may also depend on cultural characteristics. In

our country, it is observed that elderly individuals use their medications more regularly and comply with the treatments given. The findings of this study suggest that patients who have gained experience with advanced age might exhibit a higher level of medication adherence to better manage the symptoms and side effects of their illness.

In this study, the level of subjective recovery reported by patients was determined to be high, with a mean of 61.82±15.37. İpçi et al. determined the subjective recovery scale score in schizophrenia patients as 60.5±17.7 (26). Kasli et al. determined the subjective recovery scale score in schizophrenia patients as 57.07±14.21 (9). Can Öz and Duran determined this score as 64.53±10.37 (27). These findings are parallel to our findings. The fact that the scale was developed in Türkiye and these studies were conducted in our country may be the reason for similar results. Individuals receiving care in the same culture are likely to achieve similar outcomes.

In this study, education is among the variables that predict subjective improvement. Narvaez et al. found in their study that education is among the variables that predict objective quality of life (28). Another study also found that higher education was associated with better personal recovery (29). A study found that highly educated women were more determined to continue their treatment. The level of education makes it easier to comply with the medication and follow the treatment procedure (30). This may have had a positive effect on subjective recovery.

Additionally, a weak positive correlation was found between medication adherence and subjective improvement. Mohamed et al. determined that there was a statistically significant difference between quality of life and medication compliance in patients with schizophrenia (25). It is known that medication adherence is important for controlling symptoms and preventing relapses (23). This study confirms the importance of educating non-adherent patients and caregivers to enhance patients' subjective recovery levels. Therefore, to support patients' subjective recovery, it is essential to monitor patients and caregivers in terms of medication adherence. In this study, the subjective recovery level was significantly lower in smokers compared to non-smokers. It is thought that smokers may have lower coping abilities. This result may depend on this. Considering that medication adherence may be low in schizophrenia patients, it is thought that subjective recovery levels may also be affected. For this reason, it is thought that psychoeducation should be provided to patients to increase compliance with treatment. This will also positively affect the subjective recovery levels of individuals.

Conducting the research with patients coming to the association is among the limitations of the research. Conducting studies with patients coming to the outpatient clinic may be beneficial in terms of comparing the results. It is also recommended to conduct studies with patients who are monitored at home.

Conclusion

In this study, the medication adherence and subjective recovery level of schizophrenia patients were found to be high. It was determined that medication adherence levels increase with age, and individuals who adhere to medication exhibit a higher level of subjective recovery. The subjective recovery level was significantly lower in smokers compared to non-smokers. Marital status, gender, education level, income level, employment status, and having children variables do not show any differences in medication adherence and subjective recovery levels.

For individuals showing non-adherence, interventions such as administering depot antipsychotic medication, conducting motivational interviews for medication usage, and following up with patients through phone calls or home visits should be considered.

This research is important because it deals with a little-studied subject. It is thought that it provides important data to the literature, especially since patient compliance with medication is a very important issue and directly affects the subjective recovery of patients. Other factors that may affect patients'

level of compliance with medication in future studies will be family relationships, social support sources, etc. It is recommended that these elements be addressed.

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Conflicts of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

1. Ertem MY, Duman ZÇ. The effect of motivational interviews on treatment adherence and insight levels of patients with schizophrenia: A randomized controlled study. Perspectives in Psychiatric Care. 2019;55(1):75–86.
2. Pardede JA. Health Education of Drinking Medication Adherence on Schizophrenia Patients. Journal of Psychiatry. 2019;2(2):723.
3. Yalçin N, Ak S, Gürel SC, Çeliker A. Compliance in schizophrenia spectrum disorders: the role of clinical pharmacist. International Clinical Psychopharmacology. 2019 Nov 1;34(6):298-304.
4. Abdisa E, Fekadu G, Girma S, Shibiru T, Tilahun T, Mohamed H, Wakgari A, Takele A, Abebe M, Tsegaye R. Self-stigma and medication adherence among patients with mental illness treated at Jimma University Medical Center, Southwest Ethiopia. International Journal of Mental Health Systems. 2020 Dec;14(1):1-13.
5. Uslu E, Buldukoglu K. Randomized controlled trial of the effects of nursing care based on a telephone intervention for medication adherence in schizophrenia. Perspectives in Psychiatric Care. 2020;56(1):63–71.
6. Settem V, Karanadi H, Praharaj S. Cognitive deficits, depressive symptoms, insight, and medication adherence in remitted patients with schizophrenia. Indian Journal of Psychiatry. 2019;61:335–41.
7. Caqueo-Urízar A, Urzúa A, Mena-Chamorro P, Bravo de la Fuente J. Effects of adherence to pharmacological treatment on the recovery of patients with schizophrenia. InHealthcare. 2021;9(1230):1–12.
8. Temesgen WA, Chien WT, Bressington D. Conceptualizations of subjective recovery from recent-onset psychosis and its associated factors: A systematic review. Early Intervention in Psychiatry. 2019 Apr;13(2):181-93.
9. Kaşli S, Al O, Bademli K. Internalized stigmatization and subjective recovery in individuals with chronic mental illness. International Journal of Social Psychiatry. 2021 Aug;67(5):415-20.
10. Erdoğan E, Demir S. The effect of solution-focused group psychoeducation applied to schizophrenia patients on self-esteem, perception of subjective recovery and internalized stigmatization. Issues in Mental Health Nursing. 2022 Oct 3;43(10):944-54.
11. Öztürk S, Sarıkaya NA, Öz S. Comparison of disability and social functionality levels and subjective recovery perceptions of the patients received and did not receive service from community mental health center. Journal of Psychiatric Nursing. 2021;12(1):1-8.
12. Kurt A, Erşan EE, Savaş İ. Comparison of self-stigma and subjective recovery status of patients receiving Community Mental Health Service and outpatient psychiatry policlinic. J Psychiatric Nurs. 2021;12(2):103-12.
13. Ishii J, Kodaka F, Miyata H, Yamadera W, Seto H, Higuchi H, Tsuruoka Y, Shigeta M. Association between functional recovery and medication adherence in schizophrenia. Neuropsychopharmacology Reports. 2022 Dec;42(4):510-5.
14. Ansari S, Mulla S. Analysis of variables affecting drug compliance in schizophrenia. Industrial Psychiatry Journal. 2014 Jan;23(1):58.
15. Faul F, Erdfelder E, Lang AG, Buchner A. G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behavior Research Methods. 2007 May;39(2):175-91.
16. Chan AH, Horne R, Hankins M, Chisari C. The medication adherence report scale: a measurement tool for eliciting patients' reports of nonadherence. British Journal of Clinical Pharmacology. 2020 Jul;86(7):1281-8.
17. Şen E, Berk Ö, Sindel D. The Validity and Reliability Study of the Turkish Adaptation of Medical Adherence Report Scale. Journal of Istanbul Faculty of Medicine. 2019;82(1):52–61.
18. Yildiz M, Erim R, Soygur H, Tural U, Kiras F, Gules E. Development and validation of the Subjective Recovery Assessment Scale for patients with schizophrenia. Psychiatry and Clinical Psychopharmacology. 2018 Apr 3;28(2):163-9.
19. Tan YM, Chong CP, Cheah YC. Impact of hospital pharmacist-led home medication review program for people with schizophrenia: a prospective

study from Malaysia. Journal of Applied Pharmaceutical Science. 2019 Jul 1;9(7):034-41.
20. Wang D, Ross B, Xi C, Pan Y, Zhou L, Yang X, Wu G, Ouyang X, Si T, Liu Z, Hu X. Medication adherence and its correlates among patients affected by schizophrenia with an episodic course: A large-scale multi-center cross-sectional study in China. Asian Journal of Psychiatry. 2020 Oct 1;53:102198.
21. Abdulkareem MM, Amin NMM. Adherence to Medication for Schizophrenia in a Psychiatric Outpatient Clinic in Sulaimani. Arab Journal of Psychiatry. 2021;32(2):141–53.
22. Ghosh P, Balasundaram S, Sankaran A, Chandrasekaran V, Sarkar S, Choudhury S. Factors associated with medication non-adherence among patients with severe mental disorder-A cross-sectional study in a tertiary care center. Exploratory Research in Clinical and Social Pharmacy. 2022 Sep 1;7:100178.
23. Moges S, Belete T, Mekonen T, Menberu M. Lifetime relapse and its associated factors among people with schizophrenia spectrum disorders who are on follow up at Comprehensive Specialized Hospitals in Amhara region, Ethiopia: a cross-sectional study. International Journal of Mental Health Systems. 2021 May 6;15(1):42.
24. El Abdellati K, De Picker L, Morrens M. Antipsychotic treatment failure: a systematic review on risk factors and interventions for treatment adherence in psychosis. Frontiers in Neuroscience. 2020 Oct 9;14:531763.
25. Mohamed SM, ElSerogy YM, El-Hameed A, Nadia A, El-Aziz A, Azaa M. Quality of life and its relation with treatment compliance among schizophrenic patients. Assiut Scientific Nursing Journal. 2021 Mar 1;9(24.0):8-17.
26. İpçi K, İncedere A, Kiras F, Yıldız M. An Examınatıon Of The relationship between subjective recovery and cognıtıve insight in patients with Schizophrenıia. Journal of Health Sciences of Kocaeli University. 2018;4(1):1–4.
27. Can Öz Y, Duran S. The effect of spirituality on the subjective recovery of psychiatric patients. Journal of Religion and Health. 2021 Aug;60(4):2438-49.
28. Narvaez JM, Twamley EW, McKibbin CL, Heaton RK, Patterson TL. Subjective and objective quality of life in schizophrenia. Schizophrenia Research. 2008 Jan 1;98(1-3):201-8.
29. Yu Y, Xiao X, Yang M, Ge XP, Li TX, Cao G, Liao YJ. Personal recovery and its determinants among people living with schizophrenia in China. Frontiers in Psychiatry. 2020 Dec 11;11:602524.
30. Wciórka J, Świtaj P, Anczewska M. The stages of recovery in relation to the other subjective and objective aspects of psychosis. Psychiatry Research. 2015 Feb 28;225(3):613-8.