

The Relationship Between Internalized Stigma with Self-reported Cognitive Dysfunction and Insight in Schizophrenia

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ABSTRACT

Background: This study aimed to evaluate the relationship between internalized stigma with self-reported cognitive dysfunction and insight in individuals with schizophrenia.

Methods: There were 69 patients diagnosed with schizophrenia in the study. Severity of illness, insight, self-reported cognitive impairment, and internalized stigma were assessed using the Positive and Negative Syndrome Scale, the Schedule for the Assessment of Insight (SAI), the Schizophrenia Cognition Rating Scale (SCoRS), and the Internalized Stigma of Mental Illness (ISMI) scale.

Results: Schizophrenia Cognition Rating Scale—patient scores correlated positively and significantly with the ISMI subscales Alienation and Stereotype Endorsement. Schedule for the Assessment of Insight scores correlated positively and significantly with the ISMI subscales Alienation, Stereotype Endorsement, Discrimination Experience, and Social Withdrawal. There was no correlation between SCoRS—patient, SAI subscale, and total scores. In the regression analysis, SCoRS—patient score and SAI total scores explained 38.2% of the ISMI Alienation subscale, and 25.5% of the ISMI Stereotype Endorsement subscale.

Conclusion: Significant associations were found between internalized stigma with self-reported cognitive impairment and insight. Clinicians should be aware of higher degrees of internalized stigma in persons with schizophrenia who experience subjective cognitive deficits and have higher levels of insight.

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INTRODUCTION

Internalized stigmatization is a person's endorsement of the negative stereotypes available to them in the community.¹ In the results of a systematic review, the frequency of components of internalized stigma among patients with psychotic disorders was between 27% and 53%.² High levels of internalized stigmatization in schizophrenia are associated with decreased self-confidence, hopelessness, deterioration in treatment compliance, deterioration in social and occupational functioning, and a decrease in the quality of their lives.³⁻⁷ Yanos et al described an "illness identity," positing that self-stigma can distort an individual's identity, diminishing self-esteem and hope, and prompting a belief that recovery is unlikely.⁸ These negative evaluations are assumed to be reinforced by the "insight paradox," in which accepting one's illness (in a sense, "insight") leads to hopelessness and lowered self-esteem through the agency of internalized stigma.⁹ Given the negative effects of self-stigma, a fuller understanding

of the underlying mechanisms can help to refine existing interventions and develop new therapeutic strategies.¹⁰

Cognitive impairment is an important feature of schizophrenia that leads to deterioration in social and occupational functionality, difficulties in living an independent life, and treatment compliance.¹¹ As cognitive dysfunction is thought to be the most important indicator of the functional course of schizophrenia.¹² Along with symptomatic improvement, improvement in cognitive functions is also quite significant for the outcome of the disease.¹³

Although there are studies investigating determinants of self-stigma in schizophrenia, few studies have addressed the relationship between cognitive impairment and self-stigma. Lysaker et al¹⁴ reported that poor attention and higher negative symptoms correlate with higher self-stigma and concluded that these increase the person's sense of

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inadequacy, causing problems in everyday living. They also suggested that this experience of disability may be seen to confirm stereotypical beliefs about mental illness. Nabors et al¹⁵ found that higher levels of metacognitive capacity were correlated with stigma resistance. In a similar vein, a recent study reported that poor cognitive functioning is related to internalized stigma and suggested that self-stigma increases when people with poor cognitive functions have difficulty fulfilling the roles expected of them.¹⁶

Assessment of subjective cognitive impairment is also very important, as is objective cognitive assessment. As the reliability of self-report measures of cognitive deficits is controversial, research on self-perceived cognitive deficits is relatively scarce.¹⁷ However, there is evidence that self-perceived cognitive deficits are a major determinant of symptom severity and functional prognosis in patients with schizophrenia.^{18,19} It will help to plan actions related to functional outcome and personalized treatment if individuals can correctly describe their own cognitive impairment. In this context, it can be said that patients who are aware of their illness and its consequences can accurately assess the cognitive impairment due to the illness.

Internalized stigma is a term that has a number of components. However, a single total score for self-stigma was used in a recent research investigating the relationship between internalized stigma and subjective cognitive deficits.²⁰ This research aims to examine the relationship between internalized stigma and self-reported cognitive impairment and insight. Various items of internalized stigma are examined. We hypothesized that higher levels of self-reported cognitive impairment will be correlated with higher levels of internalized stigma, and that higher levels of insight will also be correlated with higher levels of self-stigma. We also hypothesized that insight mediates the relationship between self-reported cognitive function and internalized stigma.

MATERIAL AND METHODS

Population and Sample

It was a cross-sectional study undertaken in the outpatient psychiatric clinic of the Samsun Mental Health and Disease Hospital over 6 months. The participants were 69 schizophrenia patients who met the following inclusion criteria: persons aged between 18 and 65 years, with a

diagnosis of schizophrenia based on the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), who agreed to take part after receiving information about the research and were willing and able to complete the associated scales, assessments, and clinical interviews. The exclusion criteria were as follows: persons with a chronic comorbid disease (e.g., cancer); those whose condition prevented them from providing accurate information (e.g., delirium, dementia, other neurological disorders); a diagnosis of substance use disorder; or having undergone electroconvulsive therapy in the previous 6 months. Eligible participants were notified and written informed permission was received from those who consented to participate. Participants' sociodemographic data were recorded on the relevant form. Participants were clinically interviewed and administered the Positive and Negative Syndrome Scale (PANSS), the Schedule for the Assessment of Insight (SAI), the Schizophrenia Cognition Rating Scale (SCoRS), and the Internalized Stigma of Mental Illness (ISMI) scale. This research complied with the principles of the Declaration of Helsinki and was endorsed by the Clinical Research Ethics Committee Ondokuz Mayıs University (Ethical Approval Number: 2020/367; Date: May 17, 2020).

Data Collection Tools

Sociodemographic Data Form: This form was designed by the researcher to record the socio-demographic and clinical variables of the participants.

Positive and Negative Syndrome Scale: A scale for assessing positive symptoms, negative symptoms, and general psychopathology in people with psychotic disorders, designed by Kay et al.²¹ Kostakoğlu et al conducted Turkish validity and reliability research on the PANSS (Cronbach's $\alpha=0.71-0.75$).²² Cronbach's $\alpha=0.81$ for this model.

Schedule for the Assessment of Insight: The scale was developed by David based on 3 components: recognition of psychotic experiences, awareness of the disease, and treatment compliance.²³ This semi-structured instrument consists of 8 components and is applied by the clinician. The first 7 items have a maximum score of 14. It is up to the clinician whether or not to ask the eighth item, and, if asked, the maximum score that can be achieved from the total rating is 18. Higher scores represent greater insight. Aslan et al conducted Turkish validity and reliability studies of the SAI (Cronbach's $\alpha=0.83$).²⁴ The model's Cronbach's $\alpha=0.77$.

Schizophrenia Cognition Rating Scale: This 20-item interview-based clinical assessment was developed by Keefe et al.²⁵ The scale is designed to measure how the cognitive difficulties associated with schizophrenia impact functioning in daily life. The assessment addresses attention, memory, reasoning, problem solving, working memory, verbal learning, and motor ability, all of which are strongly linked to psychosocial functioning. Each item is rated on a 4-point

MAIN POINTS

- Among people with schizophrenia, insight is associated with higher self-stigma.
- Self-reported cognitive dysfunction was associated with higher self-stigma in schizophrenia.
- Clinicians should be aware that people with schizophrenia who experience subjective cognitive impairment have higher levels of self-stigma.

scale (1-4); higher ratings indicate greater impairment. The data are collected from 3 sources: the patient, the informant who has the most frequent interaction with the patient, and the interviewer who administers the test. In addition to clinical observations, the interviewer's assessment was supported by interviews with the patient and the informant. Turkish validity and reliability studies of the SCoRS have been carried out by Özak et al (Cronbach's $\alpha=0.93$).²⁶ Cronbach's $\alpha=0.87$ for this model.

Internalized Stigma of Mental Illness Scale: This self-administered 29-item Likert-type scale was designed by Ritsher et al to evaluate an individual's subjective experience of stigmatization based on 5 subscales: Alienation, Stereotype Endorsement, Discrimination Experience, Social Withdrawal, and Stigma Resistance.²⁷ Items on the Stigma Resistance subscale are scored inversely. Total scores are calculated as the sum of all 5 subscales. The scale has no cutoff point; the higher the score, the more severe is the individual's stigma (in the negative direction). Turkish validity and reliability studies of the ISMI have been carried out by Ersoy et al (Cronbach's $\alpha=0.93$).²⁸ In previous studies, to improve the internal consistency of the ISMI, it was recommended that the Stigma Resistance subscale should not be included.^{29,30} Therefore, we did not use the Stigma Resistance subscale, and the internal consistency of ISMI in this model was adequate (Cronbach's $\alpha=0.85$).

Statistical Analysis

The statistical analysis of data obtained was analyzed using Statistical Package for the Social Sciences (SPSS), version 21.0 for Windows (IBM SPSS Corp.; Armonk, NY, USA). The Kolmogorov-Smirnov test was used to assess the normality distribution of the variables. Normally distributed variables are presented as mean \pm SD, and non-normally distributed variables are presented as median (minimum-maximum). Categorical variables are presented as numbers and percentages. Pearson and Spearman correlation coefficient tests were used to analyze the relationship between the normally and non-normally distributed variables, respectively. Using the ISMI Alienation and Stereotype Endorsement subscales as dependent variables and the SCoRS patient scores as the independent variable, a multiple regression analysis was performed to investigate the effect of subjective cognitive impairment on internalized stigma. The multiple regression analysis was performed in 3 steps: i) SCoRS—patient outcomes only; ii) inclusion of SAI summed scores; and iii) inclusion of PANSS total scores. The variables were input simultaneously at each level of the analysis. A value of $P < .05$ was accepted as statistically significant.

RESULTS

Among the 69 participants enrolled in the study, 46 (67%) were male; 23 (33%) were female; 23 (33%) were

married; and 15 (22%) were employed. The mean age of the patients was 42.35 ± 10.11 years; the mean age of the disease onset was 26.41 ± 7.68 years; and the mean disease duration was 15.94 ± 10.51 years. Table 1 shows the sociodemographic data of the patients and their scores on the clinical scales.

Age at disease onset was found to be negatively correlated with Stereotype Endorsement ($r=-0.240$, $P = .047$), and disease duration was positively correlated with Discrimination Experience ($r=0.292$, $P = .015$). No further correlations were observed between the demographic variables and ISMI subscales ($P > .05$). As there was a significant positive correlation between SCoRS—patient scores and SCoRS—interviewer scores ($r=0.916$, $P < .001$), only SCoRS—patient scores were included in the following statistics.

Scores on the ISMI Alienation subscale were significantly positively correlated with SCoRS—patient, SAI subscale, and SAI total scores. There was a positive, significant correlation between Stereotype Endorsement and PANSS total, SCoRS—patient, Recognition of Psychotic Experience, and SAI total scores. Correlations between the ISMI subscales and clinical scales are reported in Table 2. There was no significant correlation found between SCoRS—patient scores and SAI subscales, Treatment Compliance ($P=.774$), Awareness of Illness ($P=.422$), Recognition of Psychotic Experience ($P=.474$), and SAI total scores ($P=.584$).

Based on the findings of the correlation analyses, linear regression analyses were carried out for the ISMI subscales. The SCoRS—patient scores explained 10.5% of the variance in Alienation; adding SAI total scores to the model explained 37% of the variance in Alienation. The PANSS total score was not a significant predictor (Table 3). The SCoRS—patient scores explained 17.9% of the variance in Stereotype Endorsement. When total SAI scores were included, the model explained 24.4% of the variance in Stereotype Endorsement. The PANSS total scores and age at disease onset were not significant predictors (Table 4). The SCoRS—patient scores were not a significant predictor of Discrimination Experience or Social Withdrawal ($P=.103$, $\beta=0.198$ and $P=.192$, $\beta=0.193$, respectively).

On the other hand, SAI total scores explained 10.2% of the variance in Discrimination Experience ($P=.004$, $R^2=0.115$, adjusted $R^2=0.102$). When PANSS total scores were added to the model, the 2 variables explained 24.3% of the variance in Discrimination Experience ($P < .001$, $R^2=0.265$, adjusted $R^2=0.243$). Disease duration did not predict Discrimination Experience ($P=.063$, $\beta=0.197$). Social Withdrawal was predicted by SAI total scores ($P < .001$, $R^2 = 0.232$, adjusted $R^2= 0.220$). After including PANSS total scores in the model, the 2 variables explained 38.9% of the variance in Social Withdrawal ($P < .001$, $R^2=0.407$, adjusted $R^2=0.389$).

Table 1. Sociodemographic Characteristics and Clinical Measures of Participants

Sociodemographic Characteristics	n (%)
Gender	
Male	46 (66.7)
Female	23 (33.3)
Marital status	
Single	46 (66.7)
Married	23 (33.3)
Employment status	
Employed	15 (21.7)
Unemployed	54 (78.3)
Clinical Measures	Mean ± SD Median (Minimum-Maximum)
Age (years)	42.35 ± 10.11
Education (years)	8 (4-16)
Age at disease onset (years)	26.41 ± 7.67
Disease duration(years)	14 (1-40)
Number of previous hospitalizations (years)	4 (1-25)
PANSS	
Positive	10 (7-27)
Negative	13 (7-24)
General psychopathology	27 (17-43)
Total score	51.40 ± 11.82
SAI	
Treatment compliance	4 (1-4)
Awareness of illness	4 (0-6)
Recognizing of psychotic experience	2 (0-4)
Total	8.50 ± 3.11
ISMI	
Alienation	13.36 ± 4.03
Stereotype endorsement	14.85 ± 3.29
Discrimination experience	12.36 ± 3.29
Social withdrawal	14.10 ± 3.85
Stigma resistance	10.50 ± 2.29
Total score	65.35 ± 12.24
SCoRS	
Patient	33.25 ± 7.9
Interviewer	36.52 ± 8.82

ISMI, Internalized Stigma of Mental Illness Scale; PANSS, Positive and Negative Syndrome Scale; SAI, Schedule for the Assessment of Insight; SCoRS, Schizophrenia Cognition Rating Scale.

DISCUSSION

In this research, the relationship between self-perceived cognitive impairment and insight with internalized stigma was investigated in patients with schizophrenia. Specifically, we hypothesized that internalized stigma is correlated with self-reported cognitive impairment and

insight. The results of correlation and multiple regression analyses reveal that Alienation and Stereotype Endorsement are significantly correlated with self-reported cognitive impairment and insight after the severity of symptoms was controlled for. Discrimination Experience and Social Withdrawal were associated with insight but not with self-reported cognitive impairment.

The relationship between self-stigma and cognitive functions is not fully clarified.³¹ In a recent article, Chuang et al reported that participants with higher total internalized stigma scores returned higher scores for subjective cognitive impairment.³² Shin et al found that self-reported deterioration in cognitive function leads to internalized stigma and contributes to diminished quality of life. They also noted that self-perception of cognitive impairment is associated with self-stigma, which may reduce self-efficacy.²⁰ Chan et al reported that as a result of poor cognitive functions, patients may encounter difficulties in fulfilling the roles expected from them and might expose more discriminatory experiences and this may further increase self-stigma.¹⁶

Internalized stigma is thought to comprise 5 components: i) Alienation, ii) Stereotype Endorsement, iii) Discrimination Experience, iv) Social Withdrawal, and v) Stigma Resistance. According to Morgades-Bamba et al, Discrimination Experience would be a reason for internalization, Social Withdrawal would be a result of internalization, and Stigma Resistance would be a barrier to it. They further argued that Alienation and Stereotype Endorsement are the real dimensions of internalized stigma and that these 2 dimensions would account for self-concept distortion. Indeed, they suggested that all the negative consequences of internalized stigma relate to negative self-concept.³³ Similarly, we observed that higher scores on the ISMI subscales Alienation and Stereotype Endorsement were related to higher scores on self-reported cognitive impairment. In this context, our hypothesis that self-reported cognitive impairment may increase internalized stigma has been confirmed. Similarly, it seems likely that patients who self-report cognitive impairment cannot fulfill their expected roles; they may attribute their consequent feelings of inadequacy to the disease and may not see themselves as full members of society. In this way, individuals may feel alienated, endorse the prevailing stereotypes, and become more self-stigmatized.

In a similar vein, in the study on the relationship between objective and subjective cognitive functions and stigmatization, Prouteau et al divided patients with schizophrenia spectrum disorder into 3 groups: high cognitive impairment/moderate cognitive complaints, good cognitive functioning/moderate cognitive complaints, and moderate cognitive impairment/high cognitive complaints. They reported higher levels of anxiety, depression, and stigmatization in the moderate cognitive impairment/high cognitive complaints group and explained the finding in

Table 2. Correlations Between Internalized Stigma of Mental Illness Scale Subscales and Positive and Negative Syndrome Scale, Schedule for the Assessment of Insight, and Schizophrenia Cognition Rating Scale—Patient Scores

	ISMI Alienation		ISMI Stereotype Endorsement		ISMI Discrimination Experience		ISMI Social Withdrawal	
	<i>r</i>	<i>P</i>	<i>r</i>	<i>P</i>	<i>r</i>	<i>P</i>	<i>r</i>	<i>P</i>
PANSS								
Positive	0.117 [‡]	.339	0.206 [‡]	.089	0.174 [‡]	.154	0.241 [‡]	.046*
Negative	0.091 [‡]	.455	0.136 [‡]	.264	0.253 [‡]	.036*	0.288 [‡]	.017*
General psychopathology	0.071 [‡]	.560	0.229 [‡]	.580	0.287 [‡]	.017*	0.275 [‡]	.022*
Total score	0.140 [†]	.252	0.246 [†]	.042*	0.297 [†]	.013*	0.294 [†]	.014*
SAI								
Treatment compliance	0.377 [‡]	.001**	0.330 [‡]	.119	0.311 [‡]	.009**	0.275 [‡]	.022*
Awareness of illness	0.433 [‡]	<.001**	0.252 [‡]	.037	0.219 [‡]	.071	0.414 [‡]	<.001**
Recognizing of psychotic experience	0.570 [‡]	<.001**	0.368 [‡]	.002**	0.323 [‡]	.007**	0.591 [‡]	<.001**
Total	0.542 [†]	<.001**	0.302 [†]	.012*	0.345 [†]	.004**	0.535 [†]	<.001**
SCoRS—patient	0.344 [†]	.004*	0.437 [†]	<.001**	0.198 [†]	.103	0.193 [†]	.112

ISMI, Internalized Stigma of Mental Illness Scale; PANSS, Positive and Negative Syndrome Scale; SAI, Schedule for the Assessment of Insight; SCoRS, Schizophrenia Cognition Rating Scale.

**P* < .05.

***P* < .01.

[†]Pearson correlation coefficient.

[‡]Spearman correlation coefficient.

terms of this group’s endorsement of negative stereotyping of their situation.³⁴ In addition, Violeau et al also reported in their recent study that subjective cognitive deficit is,

in a sense metacognition and correlated with internalized stigma. They further suggested that subjective cognitive

Table 3. Multiple Regression Analysis with Internalized Stigma of Mental Illness Scale Subscale, Alienation as the Dependent Variable and Schizophrenia Cognition Rating Scale—patient scores, Schedule for the Assessment of Insight—Total Score, and Positive and Negative Syndrome Scale—Total Score as Independent Variables

Model	β	<i>t</i>	<i>P</i>	95% CI Lower	95% CI Upper
1					
Constant		3.768	<.001	3.543	11.525
SCoRS—patient	0.344	2.995	.004	0.058	0.292
2					
Constant		1.241	.219	-1.458	6.245
SCoRS—patient	0.309	3.199	.002	0.059	0.256
SAI—total score	0.521	5.401	<.001	0.425	0.923
3					
Constant		0.100	.921	-4.499	4.973
SCoRS—patient	0.230	2.126	.037	0.007	0.228
SAI—total score	0.566	5.666	<.001	0.474	0.990
PANSS—total score	0.170	1.533	.130	-0.018	0.134

P value of the model: <.001. Adjusted *R* square value of the model 1: 0.105. Adjusted *R* square value of the model 2: 0.370. Adjusted *R* square value of the model 3: 0.382. Bold values indicate statistical significance (*P* < .05).

ISMI, Internalized Stigma of Mental Illness Scale; PANSS, Positive and Negative Syndrome Scale; SAI, Schedule for the Assessment of Insight; SCoRS, Schizophrenia Cognition Rating Scale.

Table 4. Multiple Regression Analysis with Internalized Stigma of Mental Illness Scale subscale, Stereotype Endorsement as the dependent variable and Schizophrenia Cognition Rating Scale—patient scores, Schedule for the Assessment of Insight—Total Score, and Positive and Negative Syndrome Scale—Total Score as Independent Variables

Model	β	<i>t</i>	<i>P</i>	95% CI Lower	95% CI Upper
1					
Constant		5.620	<.001	5.672	11.918
SCoRS—patient	0.437	3.979	<.001	0.091	0.274
2					
Constant		3.814	<.001	3.139	10.034
SCoRS—patient	0.419	3.962	<.001	0.087	0.263
SAI—total scores	0.274	2.592	.012	0.066	0.513
3					
Constant		2.394	.020	1.112	12.324
SCoRS—patient	0.314	2.586	.012	0.030	0.232
SAI—total scores	0.310	2.809	.007	0.095	0.560
PANSS—total scores	0.159	1.299	.199	-0.024	0.113
Age at disease onset	-0.113	0.047	.305	-0.143	0.045

P value of the model: < 0.001. Adjusted *R* square value of the model 1: 0.179. Adjusted *R* square value of the model 2: 0.244. Adjusted *R* square value of the model 3: 0.255. Bold values indicate statistical significance (*P* < .05).

ISMI, Internalized Stigma of Mental Illness Scale; PANSS, Positive and Negative Syndrome Scale; SAI, Schedule for the Assessment of Insight; SCoRS, Schizophrenia Cognition Rating Scale.

impairment has an impact on the relationship between internalized stigma and self-esteem.³⁵ As Dubreucq et al noted, perceived cognitive deficits may have an indirect effect on clinical and functional outcomes as a result of self-stigma.³⁶ The available evidence points to a significant relationship between subjective cognitive impairment and internalized stigma, and further research is warranted.

Many trials have reported that good insight is related to internalized stigma.^{37,38} In the present case, as in previous studies, we found a positive relationship between insight and internalized stigma. Insight in schizophrenia is an influential element, especially in terms of compliance with treatment. However, there is some evidence that insight is also associated with negative factors such as depression, lower self-esteem, and dysphoria,^{39,40} and these effects are mediated by internalized stigma.⁴⁰⁻⁴² For that reason, combating internalized stigma in schizophrenia is especially important if we are to prevent these devastating effects.

We hypothesized that insight plays a mediating role in the association between subjective cognitive dysfunction and internalized stigma, but we found no evidence that insight is correlated with self-reported cognitive impairment. Similar to our results, Cuesta et al found no association between insight and cognitive function.⁴³ Sanchez-Torres et al reported that social cognition is linked to insight, whereas another cognitive function, neurocognition, is not linked to insight.⁴⁴ A recent meta-analysis also showed that the relationship between insight and neurocognition is weak.⁴⁵ Recent studies have focused on cognitive insight, as a form of metacognition rather than clinical insight. In one such study, Grover et al reported that cognitive dysfunction is not related to clinical insight but is associated with cognitive insight, and that clinical and cognitive insight are not related.⁴⁶ Awareness of neurocognitive deficiency has been defined as neurocognitive insight (i.e., not associated with clinical insight).^{47,48} In light of these considerations, the failure to detect a relationship between insight and cognitive dysfunction can be attributed to the fact that only clinical insight was evaluated in this study.

Over time, a number of studies have reported that the concept of recovery from schizophrenia is not simply a matter of symptomatic remission, but must be assessed in the context of quality of life, socio-occupational functioning, cognitive impairment, and experienced stigma.⁴⁹ This wider recognition of the significance of cognitive deficits in recovery from schizophrenia has spurred increased efforts to develop behavioral treatments for cognitive impairment. Perceived cognitive dysfunction has indirect effects on clinical and functional outcomes through self-stigma.³⁶ Therefore, treating deterioration in cognitive functions, which is a main symptom of schizophrenia, is also essential in terms of coping with stigmatization and its consequences.

This cross-sectional study has some limitations. First, it evaluated only clinical insight and not cognitive insight. The generalizability of these results to the wider community is limited because the study was confined to the hospital-presenting population, and the sample size was relatively small. Pharmacological and nonpharmacological interventions that might impact cognitive function were not evaluated. It is known that cognitive functions are impaired, especially in those with depression and anxiety symptoms.⁵⁰ Clinical conditions of the participants that may cause cognitive impairment such as anxiety and depression were not evaluated. A further limitation is that objective cognitive functions were assessed using only the SCoRS instrument because it is easy to use in the clinic. Therefore, subjective and objective cognitive dysfunction scores may have been correlated. Assessing objective cognitive functions with other cognitive instruments may better reveal whether there is a difference in subjective and objective cognitive deficits. This may show more objectively how aware patients are of their cognitive deficits. These limitations should be addressed in future studies.

The present findings suggest that internalized stigma is significantly associated with insight and self-reported cognitive dysfunction. Independent of insight, patients with schizophrenia may be aware of their own cognitive impairment, which can lead to self-stigmatization. Clinicians should be aware that levels of internalized stigma may be higher in patients with schizophrenia. In order to improve outcomes, cognitive enhancement strategies and stigma suppression strategies should be applied to patients with schizophrenia.

Ethics Committee Approval: This study was approved by the Ethics Committee of Ondokuz Mayıs University (Approval Number: 2020/367; Date: May 17, 2020).

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